

Himalayan Traditional Architecture

(With special reference to the Western Himalayan Region)

O.C. Handa

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INTRODUCTION TO THE SERIES

INDIA HAS HAD A LONG HISTORY OF CIVILISATION GOING BACK SEVERAL THOUSAND years. In the global mind this civilisation is largely associated with spiritualism, philosophy and religiosity. There is also an appreciation of great traditions that have continued till today: of performing arts in dance and music; of magnificent works in architecture, sculpture, painting; and of artisanal output of quality relating to crafts. However, over the last couple of centuries the image has been significantly one of poverty: surprising when John Milton in *Paradise Lost* had referred to 'the wealth of Ormuz and of Ind'. For many, it is a land of magicians and snake-charmers; of wild animals like tigers and elephants; of mendicants, and mystics. This image is changing today with India moving powerfully into the knowledge economy and becoming a power to reckon with. What is not known and appreciated is the extent to which a whole knowledge system, and particularly scientific thought, has been inextricably linked to the development of this ancient and continuing civilisation.

There are many reasons for this. An important one is that there has been no major work on the history of science and technology in India. This is not to say that no work has been done in this field; there is a great deal available relating to specific areas, and involving specialised discussion, more so concerning technology. But there is nothing covering science and technology as a whole, dealing with the many diverse areas that it covered, and particularly, its very different conceptual foundations, and also the extent to which it has underpinned the development of Indian society and civilisation. Because of this, in authoritative encyclopaedias (such as *Encyclopaedia Britannica*), Indian science and technology is dealt within a few hundred words. This must be contrasted with the situation in respect of China, following the great work of Dr Joseph Needham, who produced thirty odd volumes on the history of science

and technology of that country. This made a monumental impact in the academic repositioning of China as a scientific, rational and progressive civilisation. There is need for a similar effort with regard to Indian science and technology.

A further reason for the rather poor appreciation of the history of Indian science is that in the public eye, the development of science and technology is manifested through its innumerable technological artefacts that affect daily lives in society, and great scientific discoveries, both of which rapidly followed the developments that took place around a few hundred years ago in Europe with the birth of the modern, ongoing Scientific and Industrial Revolutions. As a result, the image of western science is so overwhelming that it swamps all earlier history.

In the West, there is major reference to the Greek origins of western philosophy and scientific thought. There was a strong coupling of Arab and Greek science, particularly as manifested in the historical library of Alexandria. It must be remembered that India was an open country, and had significant interactions with the Arab world. Also, western scholars of the pre-Christian era had information on India through reports of Greek origin. It is thus, that the 'Zero' and the 'Decimal place value system' became international and got referred to as the Arabic numerals; but these had their origins in India. Indeed 'Zero' has a deep philosophical meaning, that was characteristically Indian, denoting 'nothing or emptiness'.

There are many who, without a deep appreciation of the character of indigenously developed knowledge structures in India, often propagate the idea that science (which was so intimately interwoven with these knowledge structures) came to India from the outside through Islamic and Western conquests. The fact is that India absorbed all that came in from the outside (whether by invasion or otherwise) and gave freely of itself to the East and to the West.

The following reasoning may provide an indication why it has been difficult to compile a meaningful and reasonably comprehensive history of science and technology in India.

A great deal of knowledge transmittal in India has been through the oral tradition, having been conveyed through chants, hymns, poems and the like; this has been true even in mathematics. These do not remain in the written record, and much of it has probably been lost with the cataclysmic changes in Indian society.

What has been written has invariably been on palm leaf and such other materials, followed by paper recordings; this is particularly the case for the earlier period in history

prior to the advent of printing. A great deal of the source material on which writing has taken place, has been subject to ravages of weather and insects, since India is located in the tropics characterised by high temperatures and humidity. After printed books came into existence, which ensured the availability of many copies of a text, India has not had a great history in science and technology, except in the last century.

Even when written, this was in the language then prevailing, namely Sanskrit, particularly of the archaic variety, and other related languages; there was also the problem of scripts. In recent years, one finds that those who know these scripts and languages, particularly their older forms, have little knowledge or interest in matters that are scientific. Their interests largely lie in areas of literature, philosophy, religion and the like. In contrast, those who know science, and could contribute to a meaningful analysis of recorded history, have scant knowledge of the language and the scripts of the past and often little interest.

Finally, what was transmitted, even on matters that were scientific, was mixed up with a great deal of philosophy, religion and mysticism; often practitioners of science of those days were philosophers or those high up in the socio-religious hierarchy. Knowledge in ancient India was much less compartmentalised; it was characterised by a holistic approach. To extract that which would be regarded as science from this totality is not an easy task.

For all these reasons, the overall effort relating to writing of the history of science and technology in India has been a limited and scattered effort.

From what we know already, it is clear that there was a significant development of science and technology, covering a wide range of areas, with high creativity and originality, and over a long time-span. It is important to record and understand this. The purpose would not be to go back to the past from the viewpoint of claiming how great India was. Whilst there were many great discoveries made in India, which predate the same ones later made in the West, and now named after western scientists, the purpose would also not be to claim priorities or demand changes in attributions. What is important is to carry out proper historical work to understand the developments that had taken place and to record them appropriately.

There are two important reasons why this should be done. The first is from the viewpoint of understanding the nature of society in which science can flourish. Ultimately it is a thinking-questioning society that can give rise to science. It is from this angle that Jawaharlal Nehru constantly spoke about the need for society to be imbued with

a scientific temper, namely, society functioning on a rational objective basis, which can give rise to the development of science – with innovation, originality, and creativity. These qualities cannot arise in a society which is hierarchical and authoritarian. On this aspect Gautama, the Buddha had remarked:

Believe nothing
 Merely because you have been told it
 Or because it is traditional
 Or because you yourself have imagined it
 Do not believe what your teacher tells you,
 Merely out of respect for the teacher
 But whatever after due examination and analysis
 You find to be conducive to the good, the benefit,
 The welfare of all beings,
 That doctrine believe and cling to,
 And take it as your guide.

It is important to understand why, with so much creativity and originality that had characterised Indian science and technology of the past, those developments did not last or take off on a self-sustaining basis.

The second reason why one needs to look at the history of science and technology in India is that, to a great extent, the conceptual approach in it has been different from that which has characterised western development. It has tried to examine problems on a holistic basis. It has dealt with complexity. Thus the fundamental basis of the Indian system of medicine, referred to as *Ayurveda*, is very different from that which characterises the allopathic system. *Ayurveda* is a holistic system, which attempts to ensure harmony among the different components of the human body, and aspects of its functioning, including relationships with the outside world and inputs received. The approach is to ensure that the mind-body system remains in health, rather than in the treatment of disease. This involves a complex many-body synergy (including the treatment with medication, body discipline of *yoga*, *meditation* and the like) rather than the deductive, reductionist 'active principles' approach of allopathy; the latter has certainly yielded a plethora of miraculous results.

One is also amazed at the dimensions with which the ancients grappled with, and their many speculations on issues such as origins of the universe and cosmology that

are still with us. There is a great deal that one can learn from these excursions into their thoughts.

It is, therefore, important that any such history deals not only with technological issues that are related to societal needs but to science as a whole.

There have been a number of efforts to cover the history of science and technology in India. The Indian National Science Academy publishes a journal entitled *Indian Journal of History and Science* under the guidance of the Indian National Commission for History of Science. One of the other, very ambitious, ongoing projects in this area is that on the 'History of Science, Philosophy and Culture in Indian Civilisation' of which the general editor is Prof D.P. Chattopadhyaya. The series is projected to cover approximately seventy-five volumes, of which twelve have already been published. There are also many individual efforts such as the Sandeepani Science Gallery in Porbunder and innumerable publications that cover specific topics in science and technology such as copper and its alloys in ancient India, works on Indian medicine and medicinal plants; works on logic, where India was particularly strong, and so on.

I am glad that the Infinity Foundation has considered it appropriate to produce a series on the History of Indian Science and Technology (HIST). It is important that this effort covers not only areas of technology but also of science. It will have to bring together for this, scientists and historians of science, along with those concerned with philosophy, anthropology, religion, ancient Indian languages and many such other disciplines, who will have to interact strongly among themselves on the basis of available textual and other material. It has to be a holistic, interdisciplinary approach. This is a major task but well worth doing.

Prof M.G.K. Menon, FRS
Advisor, ISRO (Department of Space), New Delhi

NOTE ON INFINITY FOUNDATION

Facilitating Research, Publishing and Education in:
History of Indian Contributions to Science and Technology (HIST)

'In 1750 China accounted for almost one-third, India for almost one-quarter and the West for less than a fifth of the world's manufacturing output... In the following decades... the industrialisation of the West led to the de-industrialisation of the rest of the world'.

—Samuel Huntington, *Clash of Civilisations*, 1997: 86-87.

It is now largely forgotten that India held its prominent economic position referenced above because of its accomplishments in science and technology. The commonly taught history of India emphasises mostly kings, invasions and conflicts. The history of Indian ideas, if taught at all, is limited to religion, philosophy and popular culture. What is being often ignored is the well-documented evidence of India's significant contributions in metallurgy, civil engineering and architecture, water harvesting, shipping and ship building, textiles, medicinal plants, medicine, agriculture, forest management, management, astronomy and linguistics, among other disciplines.

By way of comparison, Joseph Needham's 30 plus volumes on Chinese history of science and technology have made a monumental impact in the academic repositioning of China as having a rational and progressive civilisation. This work is a premier reference in China studies world-wide. But no such equivalent exists for India, as explained below:

'Fear of elitism did not, happily, deter Joseph Needham from writing his authoritative account of the history of science and technology in China, and to dismiss that work as elitist history would be a serious neglect of China's past...'

'A similar history of India's science and technology has not yet been attempted, though many of the elements have been well discussed in particular studies. The absence of a general study like Needham's is influenced by an attitudinal dichotomy. On the one hand, those who take a rather spiritual — even perhaps a religious — view of India's history do not have a great interest in the analytical and scientific parts of India's past, except to use it as a piece of propaganda about India's greatness (as in the bloated account of what is imaginatively called 'Vedic mathematics', missing the really creative period in Indian mathematics by many centuries). On the other hand, many who oppose religious and communal politics are particularly suspicious of what may even look like a "glorification" of India's past. The need for a work like Needham's has remained unmet.'

—Amartya Sen, 1997

HIST is an important part of India's story because it has been the substratum of its civilisation's rationality and secular progress, the basis for pre-colonial Indian Ocean global trade, the foundation for building India's future knowledge society, and a key element in projecting *Brand India*.

Infinity Foundation, a private non-profit foundation based in Princeton, USA, launched its HIST project with the following objectives:

- Document and discuss the history of scientific and technological achievements in the Indian subcontinent until the end of the nineteenth century, because the period after that has already been well documented.
- Inspire creativity and self-confidence among our youth, refuting the popular notion that Indians were irrational and mystical. Replace colonial notions of intellectual dependency and revive India as a premier knowledge exporter.
- Bridge the socio-economic divide: It is often the rural and the underprivileged in India who have preserved key aspects of traditional knowledge, such as in medicinal plants, or traditional civil engineering and home building. By restoring legitimacy to traditional knowledge, which is decentralised and less capital intensive, we empower local/rural cultures, lifestyles and economies. If India hopes to create genuine alternatives to rural migration and the burden of high-density metro lifestyles, we need to re-engage with, and build upon, the strengths of traditional knowledge systems.
- Build India's brand, cultural capital and soft power: Ancient India's higher education and technological genius attracted the cream of Asian students to Nalanda, Taxila

and other Indian centres of learning. The alumni and visiting scholars spread India's cultural capital across Asia. Today, USA has a strategy to educate the future leaders of the world to gain influence globally. China has also embarked upon a strategy to export its higher education for geopolitical influence. If India hopes to preserve and expand its role in the information economy or in engineering design, she needs a civilisational or 'cultural brand' in the same sense as the following culture specific brands:

Japanese-ness	Quality
French-ness	Beauty/aesthetics: cosmetics, fashion, wine, Cannes, tourism
Italian-ness	Design, art, cuisine
British-ness	Justice, law, rationality
German-ness	Precision, manufacturing
Chinese-ness	Efficiency

In each of these cases, the soft power wielded by the country's brand has fueled economic expansion using its civilisational advantages. It is important to restore a realistic counter-balance to India's negative branding brought about by some of the thrusts of the social sciences until now. The following table is not intended as a generalisation but merely as indicative of some differences between two ways of seeking Indian culture – the one by social scientists and the other, by technocrats such as those pursuing HIST research.

Social Sciences on Indian-ness	HIST on Indian-ness
Mystical and otherworldly	Rational, innovative and creative
Frozen in time and backward	Pragmatic and progressive
'Caste, dowry, sati, conflict'	Multicultural and interdependent
Knowledge came from invaders	Indian knowledge systems
The British made us a nation	Many prior nations existed
Lacking self-esteem and afraid of future	Confident and competitive
Defensive and closed	Open and globalised

Once again, Indians are increasingly being acknowledged worldwide for their brainpower, but the *civilisational brand* is dominated by 'caste, cows, curry' images from anthropology.

Furthermore, many Indians have distanced themselves from what they see as 'baggage', bringing about disconnects with their own past. HIST is a secular and all-encompassing shared past for nation-building.

It is important to bring scientists and technologists into this historical research so as to stay focused on the evidence and not the politics. The goal is not to glorify but analyse objectively, in order to use the knowledge for present and future growth and to learn from past mistakes.

INFINITY FOUNDATION'S HIST PROJECT

Although Infinity's vision is to implement this unprecedented, composite and inclusive series, we would like to acknowledge and applaud many pioneering contributions and research done in this field, such as the following, and work with them to expand the discipline:

- 5 volume series on traditional agricultural practices by Indian Council for Agricultural Research;
- 2 volume series on History of Science by Dr D.P. Chattopadhyay;
- History of Indian Medicine by Dr S. Valiathan;
- Works of Indian National Science Academy; and
- many others.

The HIST project was started in 2002, after being conceived at the Foundation's Colloquium in Woodstock that was jointly convened by Infinity Foundation and Columbia University. So far, only the series on Materials and Technologies has been started. Two other series, one on Life Sciences and another on Theoretical Sciences, are envisioned for the future.

Annual project meetings have been held all over India to review progress, share research and foster collaboration. These meetings—in places as varied as Indian Institute of Technology, Kanpur, India International Center (Delhi), Kumaon University (Nainital) and Banaras Hindu University (Varanasi)—have also served as outreach to local colleges and to the general public by giving them a chance to interact with our academic scholars. It takes approximately three years to develop each volume (the final manuscript) and involves a team of scholars, in addition to the author(s).

TOPIC SELECTION CRITERIA

The following criteria were applied in selected topics for the series:

- Time period of focus should be sciences and technologies developed until the end of the nineteenth century.
- Topics must have empirically verifiable and significant Indian contributions.
- Subject matter experts should be available, *especially within India*. This helps the growth of research communities invested in such investigations and secures the roots of this work in India over time.
- Religion and 'stories' should be avoided as evidence, namely, no 'Pushpak Viman' to be included. The goal is an honest exploration, not glorification.
- The sources and scholar must be internationally credible.

The steps include rigorous peer review and editorial review at each step, and project administration by Infinity Foundation. Infinity Foundation owns the copyright.

About Infinity Foundation (IF)

Infinity Foundation is a 501(c)(3) non-profit tax-exempt private foundation that was started in 1995 as a vehicle for its founder to give back to the Indian and American societies. For further information, please contact:

Project: <http://www.indianscience.org/>

Foundation: www.infinityfoundation.com

Address: 53 White Oak Drive, Princeton NJ 08540, USA

Email: infinityfoundation@gmail.com

Rajiv Malhotra
President, Infinity Foundation

EDITOR'S NOTE

A FEW YEARS BACK, IT WAS DIFFICULT FOR A STUDENT OF ANTHROPOLOGY OF A Western university, interested in non-literate traditional knowledge systems, to obtain permission to take up a dissertation on the topic or to muster up the necessary grants. However, now the Traditional Knowledge Systems (TKS) are gradually coming to be recognised in the West also.

Modern science can perhaps be dated to Newton's times. However, Traditional Knowledge Systems date from more than two million years ago, when *Homo habilis* started making his tools and interacting with nature. Laura Nader in her famous book *Naked Science* (Routledge: 1997) brought out a collection of essays, which show highly complex and systemised systems of traditional knowledge, be it for duck hunting, marine fishing or complex navigation in vast oceans and so on.

It is now recognised that western criteria are not the only sole benchmark by which other cultural knowledge should be evaluated. In countries with ancient cultural traditions, the *folk* and the *elite* science were taken as part of the same unified legacy and allowed to exist independently, without any hegemonic categorisations. On the other hand, colonisers systematically destroyed or undermined the local traditional science, technology and crafts of the lands and people they plundered, because of their intellectual arrogance and their insatiable desire to control and appropriate the economic means of production. Modern societies created hegemonic categories of science verses magic, technology verses superstitions, and so on, which were arbitrary and contrived. The term 'Traditional Knowledge System' was thus coined by anthropologists as a scientific system which has its own validity, in contradistinction to 'modern' science.

In India, however, there has not been such a dichotomy between the so-called Great (elite/*Margi*) and the Little (folk/*Desi*) knowledge traditions. The folk science is duly recognised as a non-literate traditional knowledge system. The folk knowledge tradition has a parental relationship to the *Margi* tradition, which is an elite, literate and systematised form of selective knowledge gleaned from the folk sciences. Folk science is an accumulation of knowledge through the millennia, gained through trial and error and experience. It is basically an empirical form of knowledge. We have the example of the Himalayan (Folk) Medicinal System where about two thousand Himalayan herbs are used, one-third of which in course of time, were incorporated into the elite *Materia Medica of the Ayurveda*. This theme will be explored in a separate volume under this series.

In India, we now have a vast amount of recent literature on the theory and practice of religious architecture, but somehow domestic architecture has mostly gone unnoticed by the literate tradition.

Dr O.C. Handa, the author of this book, combines in himself the expertise of a civil engineer and an archaeologist. He is a good photographer and an artist as well. Most of the sketches, drawings and photographs are his work. He has spent a lifetime in surveying and studying the architectural remains of the Himalayan region, particularly in the modern state of Himachal Pradesh. He began his explorations in the 1960s and continues to do so till the present day. He has travelled through very difficult and hazardous terrain for months together. Some of the sketches in the book show the dangerous paths, which girdled vertical cliffs that he had to negotiate. His accounts of the domestic architecture are permeated with empathy for the local, rural and tribal people. Through his acute observations he has recorded the innovations made by the people in constructing their dwellings. Some of the devices employed by them (for example, the *Katth-kuni* style) do not use the rigid joints, allowing the energy of the earthquake tremors to dissipate without effecting the structure. On the other hand, the ancient Kardar *Kothi* at Brahmaur was badly devastated by the Kangra Earthquake of 4 April 1905. Joints of cement, for example the RCC construction, get destroyed by earthquake tremors because of their rigidity.

Thatched roofs also provide non-rigid structures which also prevent extreme temperatures outside from affecting the interiors of the rooms. The architectural style and devices are conditioned by the local biophysical conditions. These styles are also determined by the availability of construction material, which differ from region to

region. In the Trans-Himalayan region, the houses are partly buried inside the ground as also in the mountainside behind them. This allows the house occupants to partake of the earth's natural warmth during long and freezing winters. But under the subtropical conditions they built houses on a linear plan allowing access to fresh air.

In course of time, the people learnt of the economic advantages of houses built upon a square plan, instead of a rectangular layout, as the perimeter of the latter type of house is more with no change in floor area, thus saving on building extra wall length. They have also been able to make use of such material as schist rocks which are so difficult to dress or stick to mortar.

Dr Handa tells us that the communities living in such environments decorate their houses with paints of coloured clays as well as use bas-relief and beautiful wood engravings with floral and animal motifs. All of these involve minute technological innovations and close observation of things around them.

As the objective of the HIST series of books, sponsored by Infinity Foundation, is mainly to record the History of Science and Technology, I am sure this volume will be a landmark in the documentation of non-literate traditional secular architecture.

D.P. Agrawal
Editor

PREFACE

SHELTER HAS BEEN ONE OF HUMANKIND'S BASIC NECESSITIES SINCE TIME IMMEMORIAL, besides food and clothing. While nothing has changed significantly in man's food and clothing habits, he has been constantly improving upon his dwelling to make it more homely, protective and comfortable to suit his ever-changing lifestyle under various environmental conditions. In that quest, not only have the basic materials of construction and their usage techniques changed radically, but the planning and design parameters, functional imperatives and everything else too have undergone almost complete transformation.

Living in a self-created microenvironment within the four walls of his dwelling, man has isolated himself from his surroundings. He has not only created a yawning gulf between nature and himself, but today he even dares challenge it, and in that frenzy, occasionally falls into its inescapable traps. To harness nature in a sympathetic and symbiotic manner is one thing and to 'manage' it with anthropocentric psychology is another. Consequently, he finds himself at a loss where his moorings with nature and his inheritance are concerned.

In our age, the paradox of civilisation is that the web of publicity has so completely strangled our objectives and rational thinking, that we have developed a callous attitude towards traditional wisdom and the inherited value-system, which identified us with nature. In that benumbed state, we tend to fall into the quagmire created by the influential consumerist mafia. Today, everything sustainable is conveniently available 'readymade' in synthetic capsules. Thus, alienated from one's roots and detached from the earth, humans are as helpless and desperate today as they never had been. We are today incapacitated to differentiate between the fallacies of 'synthetic living' and the subtleties of 'natural living'.

Therefore, there arises a dire need to bring us out of that stupor and to make us conscious of our roots and surroundings before it is too late. A biblical dictum says, 'Go unto the rocks whence you have sprung', and it is high time for us to realise it and look for nuggets of traditional wisdom that lie scattered and neglected among rural folks, and find their relevance in the modern context. In our times, when fundamental studies related to the environment and the common people are being encouraged, it is imperative that the so far ignored and under-evaluated wealth of traditional wisdom be explored and redefined in the contemporary scenario for the betterment of the earth and humans.

The present study on the traditional Himalayan domestic architecture (with special reference to the western Himalayan region) is a humble effort to that end. I have been studying the traditional Himalayan domestic architecture from various angles, since the early sixties of the last century, to be precise. Having travelled extensively and intensively through the area several times, I collected enough field data – measurements, structural and architectural drawings and sketches, notes and photographs. However, to make that data up-to-date, I visited all those places several times again so that nothing was left incomplete. Many new buildings were studied, drawings were prepared anew and digital photographs taken (earlier I had only bromide photographs). Thus, I had to prepare afresh all the illustrative material for this work. Dr Madhu Jain also accompanied me to several places in the interiors. She prepared a fine oil painting of a village in Jaunsar area, in Dehradun, which I have reproduced in this work (Fig. 2.15). This study, spread over eight chapters, strives to explore and bring forth the surviving nuggets of traditional wisdom in the Himalayan interiors, which have since ages provided people with cost-effective, congenial, functional and eco-friendly dwellings in this mountainous region.

To show the effects of geological and geographical factors on the regional architectural idioms and the ethnic diversity, geological and historical information has been provided. Some of the architectural features recur in different regional idioms. All such peculiarities have been described in detail, even at the risk of repetition. In this book, the convention of using the singular form of the vernacular word for specific caste/communities, when referred to as individuals and groups, has been adhered to.

Although the ancient temples and monasteries of this region, especially the classical stone temples, have already attracted attention of scholars, archaeologists and architects for their antiquity and artistic grandeur, they have yet to take notice of the equally

important traditional dwellings of the common people. The traditional wisdom that has gone into their planning, and the functional aspects of these houses may prove valuable if integrated with the modern house building technology. Because, what the modern engineers and architects have been looking for – eco-friendly and *Vastushastra* compatible architecture – may be already available in the traditional knowledge of domestic architecture.

O.C. Handa

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THE GEO-ETHNIC MOSAIC

THE MIGHTY HIMALAYA, ORIENTED NORTHWEST TO SOUTHEAST, IN THE NORTH OF the Indian subcontinent, forms a magnificent crescentic crown over it. This curvature is abruptly acute towards the western segment, where the Himalayan mountain system is at its widest, and justifies the appellation of a 'scimitar' given to it in ancient literature (Datar 1991: 7). The characteristic width of its western segment is further accentuated by the awe-inspiring heights of its silvery summits and spiny ridges, stupendous valley glaciers, unfathomable river-gorges, complex geological structures and a rich variety of temperate and alpine flora and fauna.

THE MOUNTAIN SYSTEM

All the natural features of the Himalayas have imparted to it an exotic charm and divine aura as Kalidasa extols it in *Kumarasambhavam* (Sehgal 1959: 3):

*Astyuttarasyam dishi devatatma himalayo nam Nagadhirajah,
 Poorvaparaou toyanidhee vigabha sthitah prithivya iv manadandah.(1)
 Yam sarvasbailab parikalpya vatsamn merou sthite dogdbari dohadakshe,
 Bhasvanti ratnani mahoushadheenscha prithoopadishtan duduburdharitrem.(2)*

These couplets when translated mean:

Far in the north Himalaya, lifting high
 His towery summits till they cleave the sky,

2 ♦ HIMALAYAN TRADITIONAL ARCHITECTURE

Spans the wide land from east to western sea,
Lord of the hills, instinct with deity.
For him, when Prthu ruled in day of old
The rich earth, teeming with her gems and gold,
The vassal hills and Meru drained her breast,
To deck Himalaya, for they loved him best.

Geographically, the River Indus defines the Himalayan region on the west. The spiny ridges and silvery peaks of the trans-Himalaya Karakoram Range separate it from the highlands of Central Asia on the north and from the Tibetan plateau on the northeast. Towards the east, the gorges of the Tons-Yamuna form a natural border between this region and the Central Himalayan region, popularly known as Uttarakhand or Kedarkhand, which includes the newly formed state of Uttarakhand and the kingdom of Nepal. In the south, the undulating foothills of the Siwaliks (*Koh-paya* of the Persian scholars) broadly define its border with the Indo-Gangetic plains in Punjab and Haryana. This region is located approximately between 75° and 80° East, and 30° and 36° North. It largely forms the catchments for the Indus drainage system, but a small eastern part of it also drains into the Yamuna and the Ganga.

India has sovereignty over a major part of the western Himalayan region, covering an area of 283,799 km². Pakistan has administrative control over an area of 83,839 km² towards the northwest and some portion on the northeastern side is under Chinese occupation (*The New Encyclopedia Britannica* 1977, Vol. 8: 882)

The western Himalayan region under Indian sovereignty is administratively divided into three states: Jammu and Kashmir, Himachal Pradesh and Uttarakhand (Figure 1.1). While Jammu and Kashmir and Himachal Pradesh fall entirely within the geographical domain of the western Himalayan region, only a small part of Uttarakhand, west of the Yamuna, may be included in it, on the basis of biophysical and socio-cultural affinities. The state of Jammu and Kashmir is spread over a geographical area of 222,236 km² and it forms the northwestern part of the western Himalayan region. This figure includes 120,849 km² of the geographical area that is under dispute among India, Pakistan and China. At present the net total geographical area under Jammu and Kashmir within the Indian union is only 101,387 km² with a population of 10,069,917 people living in fourteen administrative districts. These are: (1) Kupwara, (2) Baramulla, (3) Srinagar, (4) Badgam, (5) Pulwama, (6) Anantnag, (7) Leh (Ladakh), (8) Kargil, (9) Doda, (10) Udhampur, (11) Poonch, (12) Rajauri, (13) Jammu and (14) Kathua.

The state of Himachal Pradesh, with a population of 6,077,248 people, is spread over a geographical area of 55,673 km². The state is divided into twelve administrative districts, namely, (1) Chamba, (2) Kangra, (3) Lahul and Spiti, (4) Kullu, (5) Mandi, (6) Hamirpur, (7) Una, (8) Bilaspur, (9) Solan, (10) Sirmaur, (11) Shimla and (12) Kinnaur.

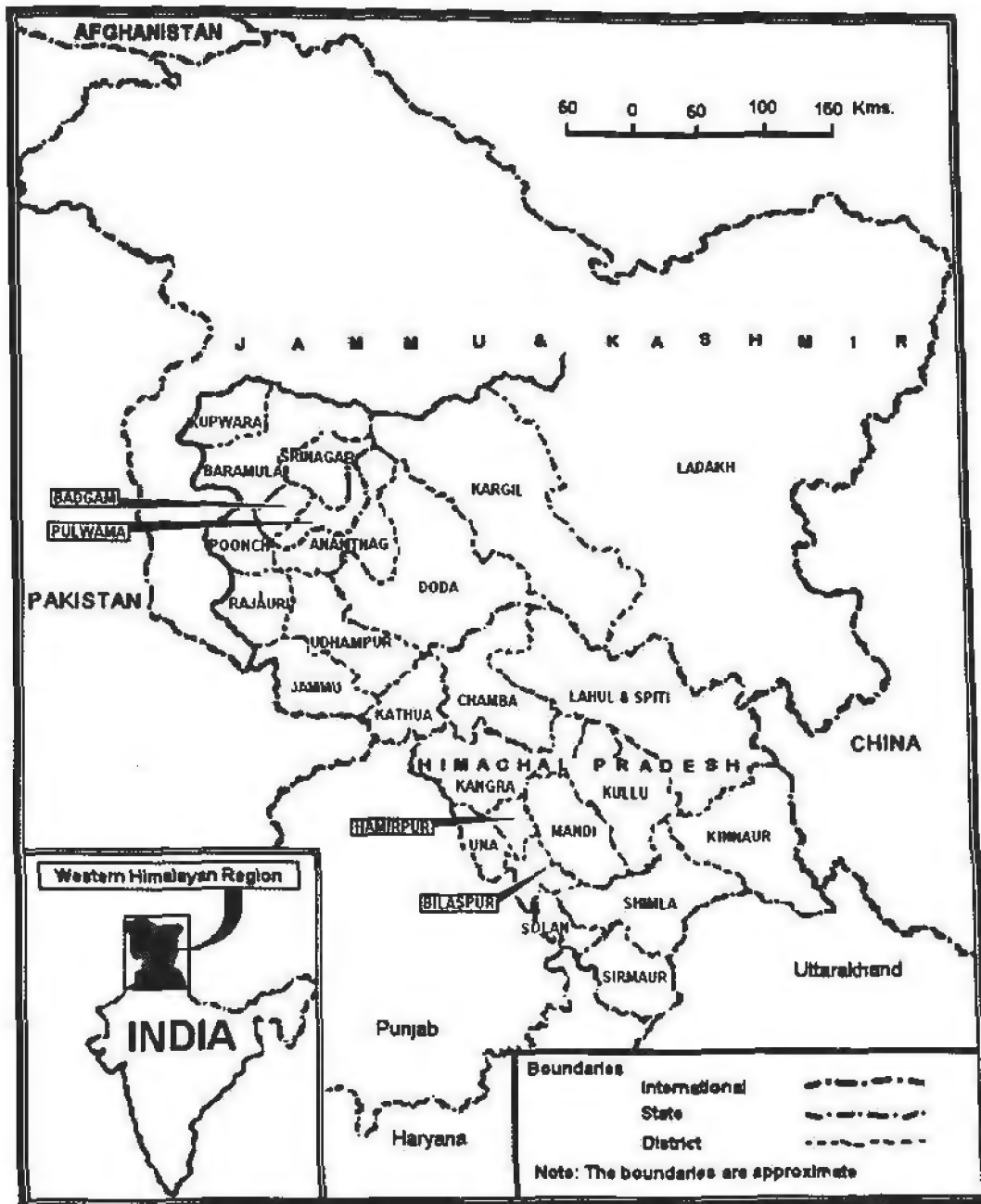


Fig. 1.1: Administrative map of the western Himalayan region

4 ♦ HIMALAYAN TRADITIONAL ARCHITECTURE

In addition to these two major states of the western Himalayan region, a very small area of only 890 km² in the Jaunsar-Bawar *pargana* of Dehradun District in Uttarakhand, west of the Yamuna, may also be included within the geo-cultural sphere of the western Himalayan region (Banthia 2002).

Politico-administrative divisions notwithstanding, the entire western Himalayan region has a long and common history of social, religious, cultural and economic coherence. This uniformity may be seen profoundly reflected in the ethno-cultural milieu, age-old identical religious beliefs, socio-cultural habits, art and architectural forms and styles. Nevertheless, the quintessential local characteristics may also be identified here in the popular ethos under the localised biophysical and geoclimatic conditions in different terrains, further accentuated by the sub-regional, socio-cultural peculiarities and conditioned by various extraneous influences. This mosaic-formation has imparted colour and charm to the religious and cultural life of this region. Thus, the variegated and spectral cultural pattern of this region exhibits inherent overall coherence and unity in diversity.

The western Himalayan region forms vast catchments for the Indus river-system. All the perennial snow-fed rivers of this system – the Indus, Jhelum, Chenab, Ravi, Beas and Satluj – either originate in this region or traverse through it. These rivers generally flow diagonally from the northeast to the southwest. However, the Indus is an exception to that rule, for, though flowing in the northwestern direction for most of its length in the trans-Himalayan snow-desert in the Ladakh region, it abruptly turns in a south-westerly direction at the foot of Nanga Parbat (8128 m), piercing the Great Himalayan Range. Besides, this region also forms a major watershed for the Yamuna, and it contributes fractionally to the Ganges. Thus, the eastern part of this region also contributes to the Gangetic river-system. The western Himalayan region is a vast elevated natural water-storage system that perennially feeds most of the rivers of the Indo-Gangetic plains.

Defined by these rivers and their numerous tributaries, the western Himalayan geographical expanse is composed of numerous range-systems. Nestled among these ranges, depending upon the geological formations, there are several wide and open valleys and sub-valleys of great grandeur and natural exuberance, and unfathomable dark and deep ravines and gorges. All these valleys and gorges are characterised not only by the different geo-climatic conditions and biospheres, but also by the very striking ethnic, social and cultural diversity among the people who inhabit them.

The western Himalayan mountain system (Figure 1.2) has broadly been delineated into different ranges, characterised by their geological peculiarities and geo-altitudinal aspects. These are: (1) the Siwalik Range, (2) the Outer Himalayan or Sub-Himalayan Range, (3) the Mid-Himalayan Range, and (4) the Great Himalayan Range.

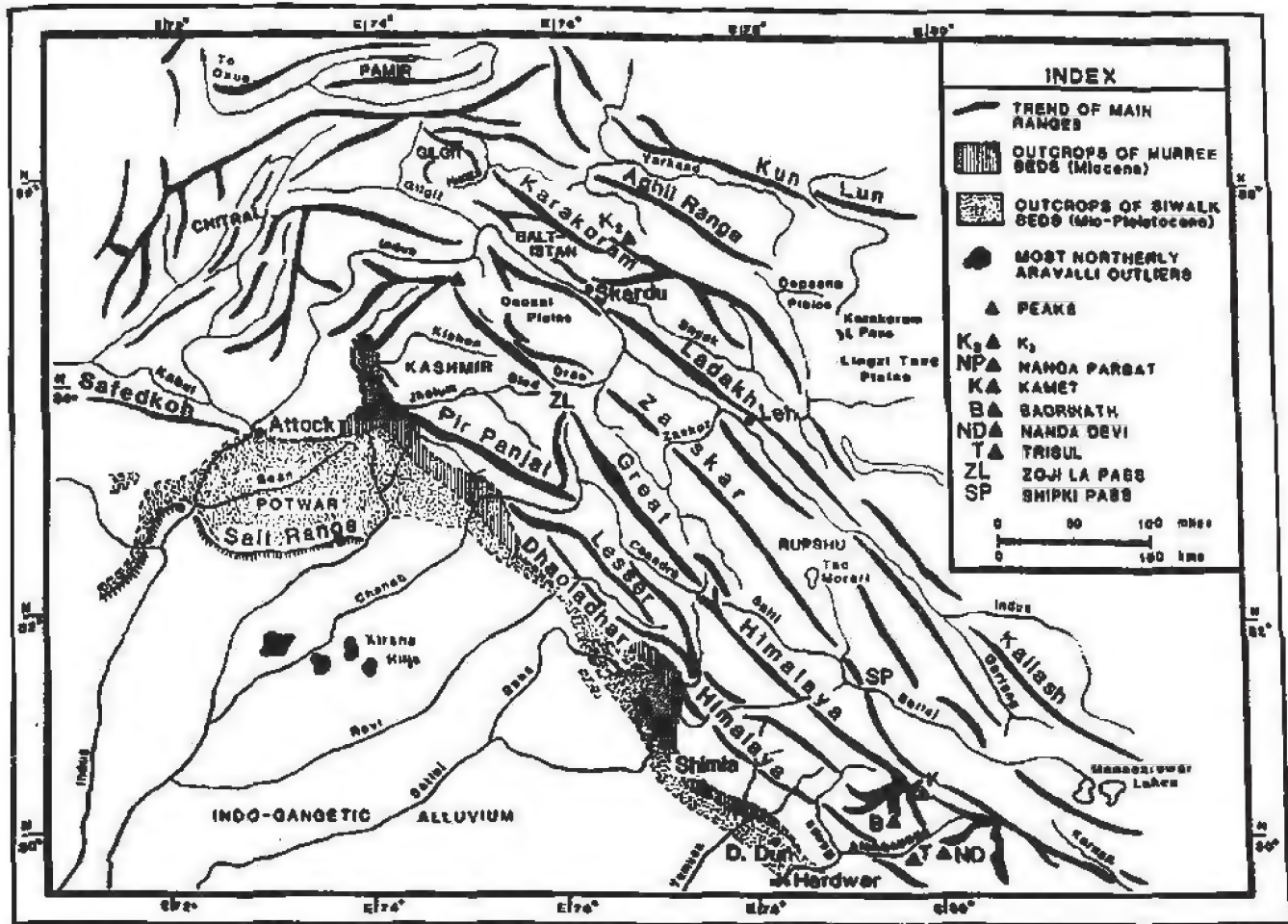


Fig. 1.2: Physical map of the western Himalayan region (based on data by D.P. Agrawal)

The Siwalik Range

The southern and outermost sandstone ranges of the western Himalaya are the Siwaliks which roughly mark a natural border between the plains of the mainland and the mountainous country of the western Himalaya. In the Siwaliks, the undulating stretches of the shallow structural basins abutting on the Dhauladhar are as wide as 100 km in the Jammu and Kangra region.

The range-system of the Siwaliks runs parallel to the main Himalayan mountain system from the northwest to the southeast, forming beautiful glens in between. This range does not rise beyond 1100 m in height. These hills are steeper towards the plains and ascend gently northwards, forming wide and flat undulating basins, the *tarai* or *doon*. These *doon* can proudly boast of unsurpassable grandeur in their verdant vales, gurgling streams and enchanting lakes, all these set at their luxurious best.

The Outer Himalayan Range or Sub-Himalayan Range

The outpost of the Himalayan mountain system is the Outer Himalayan Range. It is anchored in the *Gundgarh Peak* on the Indus in the extreme northwest, and following a southeastern course, it ends up in the Ganga watershed, south of the Baspa Valley in Kinnaur. The entire length of this range is around 500 km. Several rivers – Jhelum, Chenab and Ravi, amongst others, penetrate it before it enters Himachal Pradesh.

In Himachal Pradesh, the Beas cuts this range into a fantastic gorge at Larji and the Satluj, around Wangatu in the lower Kinnaur. Thus, this range is broken vertically into several sub-ranges and ridges east of the Kangra District. All these sub-ranges and ridges are identified by their distinct geological and geographical characteristics or by their local names.

The Sub-Himalayan Range is at its loftiest between the rivers Beas and the Ravi, where its most conspicuous landmark – the Dhauladhar (*Dhavalagiri*, that is, White Mountain) – soars up in an abrupt sweep to 4930 m. Thus, it stands as a formidable obstruction for the south-westerly monsoon clouds, which release most of their moisture over the Kangra area, before rising dry and high enough to cross northwards. Therefore, the southern slopes of Dhauladhar are some of the wettest places in the subcontinent. This range roughly marks a boundary between the districts of Chamba and Kangra.

The southern slopes of Dhauladhar provide catchments for the Beas River, which flows down the beautiful valley of Kullu and meanders through the undulating Kangra structural basin. Dhauladhar remains covered with snow for most part of the year, affording no access across it, yet the sure-footed Gaddi have been frequenting its precipitous passes with their animal wealth (popularly known as *dhan*), during their seasonal migrations ever since they found permanent homes for themselves in the upper reaches of the Ravi Valley in Chamba, popularly known as the Gadderan.

The Mid-Himalayan Range

The Mid-Himalayan Range rises in the extreme west, starting at the confluence of rivers Swat and Panjkora, and continues for about 750 km eastwards up to Uttarkashi in Uttarakhand, where it ends up as a cluster of the Yamunotri massifs. This system consists of ridges defined into four distinct massifs, namely, (1) the Swat Range, (2) the Pir Panjal Range, (3) the Lahul Range, and (4) the Bushahr Range. Of these, the Pir Panjal Range is the most significant one.

The magnificent Pir Panjal Range looks far more prominent than the Great Himalayan Range further northwards, because beyond the Dhauladhar Range, the silvery peaks and ridges of this range present a bewitching spectacle of the Himalayan mountainscape, obscuring the main Himalayan range. The Pir Panjal Range is spread between the Kishanganga gorge in Kashmir in the west and the Deo Tibba in the east in the territory of Himachal Pradesh. This range enters the Chamba District in Himachal Pradesh, and runs eastwards to form the headwaters of the Beas and its tributaries in Kullu District. The northern slopes of the Pir Panjal Range form the watershed for the Chandrabhaga River in Lahul and Spiti districts. In Kashmir, this river is known as the Chenab. The famous Banihal Pass (2832 m), the lowest point on this range, provides a fair-weather passage from the mainland to the Kashmir Valley: later a tunnel (the Jawahar Tunnel) made its way through it at 500 m below the pass. The Jawahar Tunnel now provides all-weather access to the valley.

The Pir Panjal Range forms a natural barrier between Kullu and Lahul; the only (seasonal) communication link is through the Rohtang-la (4100 m). Towards the northwest, it isolates the Pangri Valley from the rest of the Chamba District, with only an occasional fair-weather access through various passes across it. Of these, the Sach Pass (4368 m) and the Telangi Pass (4575 m) are well-frequented.

The northern slopes of Pir Panjal Range form a watershed for many rivers. Of these, the Jhelum River rises at Verinag at its base on the north, and besides the Beas towards the south.

The Great Himalayan Range

The Great Himalayan Range is a maze of ranges, which after reaching their climax, declines gradually towards the northeast, in numerous parallel sub-ranges and ridges to the edge of the Tibetan plateau. The main part of the Great Himalayan Range rises high

above the snowline and forms a magnificent crescentic crest of the Himalayan mountain system. It is a zone of perpetual snow and dazzling heights (Figure 1.3). Some of the world's highest peaks are located in this range, for instance, the Dhaulagiri (8172 m), the Annapurna (7943 m), the Mount Everest (8850 m), and so on.



Fig. 1.3: The Himalayan grandeur

In the western part, *Nanga Parbat* or *Diamir* (8182 m) is the highest peak, followed by *Shilla* (7027 m) and *Leo Pargail* (6791 m) north of the *Satluj* above the *Nako Peak* and *Gurla Mandhata Peak* (6716 m) of the *Ladakh Range*. This range is dissected by the rivers *Satluj* and *Pare* towards the eastern extremity of *Kinnaur* and by the *Indus* at the foot of *Nanga Parbat* (8128 m), respectively. The length of this part is about 1040 km between *Monomangli* (*Gurla Mandhata Peak* – 6716 m) and the headwaters of the *Gilgit* and the *Kunar*.

The Great Himalayan Range demarcates a physical and ethnic boundary between Ladakh, Spiti and the upper Kinnaur towards the northeast and Kashmir, Chamba, Lahul, Kullu and the lower Kinnaur towards the southwest, isolating the Tibetan Buddhist segment from the non-Buddhist one. The entire region to its northeast, including Ladakh, Spiti and upper Kinnaur is Buddhist-dominated and the region on the southwest, including Kashmir, Chamba, Lahul, Kullu and lower Kinnaur, is preponderantly non-Buddhist in issues of faith. While in Kashmir, the Muslim population is in the majority, the Hindu population predominates in Chamba, Lahul, Kullu and lower Kinnaur. In Lahul, however, Buddhism also has a considerable impact.

The Great Himalayan Range and its northeastern sub-ranges form a natural demarcation between the two climatic and geographical zones. To the north and the northeast of the range, the cold and dry climate in the treeless tableland of Tibet predominates against the temperate and monsoonal climate and luxuriant vegetal growth on the mainland side towards the south and the southwest.

BIOPHYSICAL REGIONS

Separated by the aforementioned ranges, the vast and variegated geographical expanse of the western Himalayan region may be demarcated into four distinct biophysical zones, depending mainly upon the temperature, altitude, precipitation, normal intensity and direction of wind, climate and the geophysical aspect of the range/system. These factors play a very crucial role in the composition of vegetation even within the same biophysical zones. These biophysical zones are the (a) Tropical Zone, (b) Subtropical Zone, (c) Temperate Zone, (d) and the Alpine Zone. While discussing these biophysical zones, the tropical and subtropical zones have been clubbed together under one heading, the *Tropical Zone*; the subtropical species of the thorny and semi-desert vegetation found in the steppe forests form an insignificant part of the western Himalayan biosphere.

Further, the influence of the western Himalayan range-system is not only relevant to the creation of different biophysical zones, but it has also overwhelmingly influenced the geo-ethnic and socio-cultural mosaic of this region, which is clearly reflected in the domestic and religious architecture of this region. Thus, these zones also define various ethno-cultural areas. Thus, the characteristics of the tropical zone are confined

to the foothill belt of the Siwalik region bordering the plains. This foothill belt also has a distinct ethno-cultural and architectural identity.

Temperate biophysical conditions extend over a vast inner mountainous area between the Outer Himalayan, the Mid-Himalayan and the Great Himalayan ranges. However, this area is characterised by very complex ethno-cultural patterns, confined to different river-valley systems. Incidentally, this area is the most relevant to the present study of the quintessential features of traditional domestic and religious architecture that flourished here. The temperate biophysical zone may be divided into two ethno-cultural regions: (1) between the Outer Himalayan Range and the Mid-Himalayan Range, and (2) the Mid-Himalayan Range and the Great Himalayan Range.

The alpine biophysical conditions are largely relevant to the vast snow-desert northeast of the Great Himalayan Range, characterised by a distinct type of ethno-cultural scenario and a very different type of domestic and religious architecture.

Based on the aforementioned considerations, the entire western Himalayan region may be broadly delimited into four ethno-cultural regions, namely, (1) Siwalik Region, (2) Sub-Himalayan Region, (3) Mid-Himalayan Region, and (4) Trans-Himalayan Region.

The Siwalik Region

As far as the western Himalayan region is concerned, the tropical biophysical condition has little relevance, for no such condition exists here. The sparse subtropical thorny and semi-desert vegetation may be found mixed with the stretches of *sal* (*Shorea robusta* Robx. ex Gaertn. f.) and other tropical deciduous species in the steppe forests. The undulating rolling foothills of the Kyarda Doon in Sirmaur District once had a reputation for flourishing flora and gregarious fauna in its congenial dense forests. However, most of those forests have been ruthlessly felled to meet the needs of ever expanding human settlements. Thus, the green cover is being depleted incessantly. Further westwards, the undulating stretches and the rolling hills formed by the shallow structural basins extend as wide as 100 km in the Kangra region, where the *sal* trees are confined to the forests at a lower altitude towards the southwest, mixed with numerous tropical and subtropical species. However, the *sal* trees here are bushier and statelier than the ones in the Kyarda Doon and further eastwards. In the higher reaches, the resinous *cheer* pine (*Pinus roxburghii* Sarg.) abounds on the mountain slopes, giving place to temperate forests on the higher reaches of the mighty Dhauladhar Range that isolates this subtropical biophysical zone from the temperate bioclimatic conditions towards the northeast. The

sal, though fine-grained, is a hard wood: therefore, it is not preferred for structural use as much as the deodar. However, owing to the higher cost and scarcity of deodar wood, *sal* has become commonly used structural wood for the houses in Kyarda Doon. *Cheer* wood, being highly resinous and porous, is rarely used for structural work. Nevertheless, people use it for secondary structures.

In ancient times, this region was divided into various *janapadas*; the ruling houses, some of which – the Audumbar, Trigart, Vamaki, Kadda, Kunind and Yaudheya – are known by their coins. However, the circumstantial evidence suggests that the Kunind or Kulind formed the bulk of the population in this region. This fact is well-established from a specific name for their territory – *Kulindopatyaka*, that is, the bounding foothills demarcating the Kulind territory – in the *Vishnupuran*. The Kunind or Kulind of the ancient times are the Kanet of today. They still form a major substratum of the agrarian population in the *tarai* region.

The communities, which subsequently settled in the outer parts of the western Himalayan region, coming from the Indian mainland in the process of a northward thrust, constitute the upper stratum of the heterogeneous population in this region. The Brahman, Khatri, Rajput, and others, are among such latecomers. Most of these communities are now identified by their different generic titles, but the ones who settled in the Duggar or the Jammu-Kangra area (Figure 1.4) are known as the Dogra. Among them, the Dogra Rajput firmly established themselves in the Siwalik foothills between the Chenab and Satluj. However, they had to face resistance from the native population of the Kanet (also known as the Chirth in Kangra and Jammu area), but the Dogra ultimately succeeded in prevailing upon them. The acrimony caused due to the Rajput infiltration into Kanet territory is reflected in their inter-caste social behaviour: the Kanet were considered outcasts in the Dogra social setup until recently. However, that feeling exists no more, and the term 'Dogra' now carries generic connotation for all classes of people living in the Dogra land – the *Duggar khetra* – or the *tarai* belt, between the Chenab and Satluj.

It is significant to note that most of the classical stone temples of the *tarai* region are concentrated in the Dogra territory. In the later Mediaeval period, many dome-shaped temples were built in the Dogra land under the patronage of different Dogra kings. Most of these temples, made of *lakhauri* or *nanakshahi* bricks in lime mortar, carry magnificent murals. These temples are a class by themselves, representative of 'Dogra architecture'. This architectural style spread eastwards in a wide area up to the Yamuna.



Fig. 1.4: A rural setting in the Jammu-Kangra region

The Kanet dominate large areas of the *tarai* belt east of the Satluj up to the Yamuna, and their population has further spilled over even into the inner Himalayan valleys, where they mingled with the majority Khasha population.

The lifestyle that has developed in the *tarai* area due to its proximity with the mainland has largely semi-urban features. Although the mainstay of livelihood here has been agriculture, yet small shops and stalls of all descriptions set around the village squares may give an impression of a *suburban atmosphere*. This feature is conspicuous in the western part in the Dogra land, where petty shops may be found interspersed between the houses aligned in clusters along the streets in the villages.

Since structural sandstone of high quality is amply available in the *tarai* belt from various quarries, there has been extensive use of stone in building works – forts, palaces,

houses and temples. In fact, it is in this area where most of the classical stone temples are concentrated. The high structural quality of the fine-grained stone of this region may well be adjudged from the fact that, on the north of the Vindhya Range, one finds a colossal rock-cut temple, complex only in this belt at Masrur in Kangra District. Further, it was from Baijnath, a famous temple town in Kangra, that the renowned sculptor Ramkinkar carted huge blocks of stone to carve out the colossal statues of Kuber and Yakshi, installed at the Reserve Bank of India building in New Delhi. The schist deposits on the slopes of Dhauladhar provide some of the finest quality slates, with which almost all the traditional residential houses here are roofed.

The Sub-Himalayan Region

The temperate biophysical zone is widely stretched between the Sub-Himalayan and the Great Himalayan ranges. The Sub-Himalayan Range and its numerous offshoots, jutting out southwards, define the southwestern extremity of this biophysical zone. Towards the northeast, the timberline at about 3350 m on the southwestern slopes of the Great Himalayan Range, defines the limit of the temperate zone. The temperate geo-climatic conditions extend to the middle part of the western Himalayan region. In Jammu and Kashmir, the temperate geo-climatic conditions exist in almost the entire state, excluding the trans-Himalayan districts of Kargil and Leh (Ladakh), and in Himachal Pradesh, the districts of Chamba, Mandi, Lahul and Spiti, Kinnaur, Solan and Sirmaur districts; the entire geographical area of the Kullu and Shimla districts is covered with temperate jungles.

This area is rich with a variety of temperate forests at lower heights, containing conifers and broad-leaved trees. These forests extend from the floor of the valleys to an average height of 3350 m, followed by an alpine zone of oaks and conifers higher up. The deodar (*Cedrus deodara* Roxb. Loud.) or the Himalayan Cedar is the most valued timber species of the temperate biophysical zone, and is the staple material for building and construction. The geographical range of deodar is very vast. Although it normally flourishes between 1900 m to 2700 m above sea level in the temperate zone, in the western Himalayan region, its forests extend from about 1370 m to 3350 m. Thus, even on the southern slopes of Dhauladhar, its dense growth may be seen along the crest and further down on the slopes and spurs. Deodar also grows at higher altitudes in the interior river valleys of the Chandrabhaga, Ravi, Beas and Satluj and along tributaries of the Yamuna and Ganga.

Besides deodar, many other coniferous and broad-leaved species also flourish in this temperate zone, depending upon the local variations in relief and climate, as well as exposure to sun and wind, for these factors considerably affect variation in the floral composition. The notable species for structural purposes are: the *lewar/shur* (*Juniperus excelsa* Bieb), *toonil/ tunh* (*Toona ciliata* Roem.), *shamshad/mohru/khursoo/kharshoo* (*Quercus semicarpifolia* Sm.), *akhrot* (*Juglans regia* L.), *bhurjpatara/bhoj-patra* (*Betula utilis* D. Don), *bankimu/kow/wee* (*Olea ferruginea* Royle), *rous/riunse* (*Cotoneaster bacillaris* Wall.), *kakkasingi/kakare* (*Rhus succedanea* L.), *thuner* (*Taxus baccata* L.), *brass/bruass* (*Rhododendron arboreum* Sm.), amongst others.

The sub-Himalayan region roughly includes the northern part of Jammu area in Jammu and Kashmir, the southern part of Chamba and Mandi, Kullu and Shimla districts and the Giri-par (that is, trans-Giri) area of Sirmour District in Himachal Pradesh. In Uttarakhand, the Jaunsar-Bawar area of Dehradun District may also be included in this region. Topographically, this region is formed by the numerous cascading and meandering streams, narrow and steep valleys and steppes, running in different directions at altitudes of about 900 m and above. Because of the ravines, the sunny hours in the deep valleys of this region, where most of the habitable areas are located, are shorter. The higher mountain ranges around also receive copious snowfall during winters, which are comparatively longer and more severe in the deeper valleys. However, where the valleys open up, as in the Kullu and Rohru areas, the scenic grandeur of nature may be found at its luxuriant best.

In this tract, one finds a heterogeneous amalgam of various ethnic communities, such as the Gujjar and the Gaddi, though the Khasha command an overwhelming majority. The Gujjar and the Gaddi are not native to this region, having been in the western Himalayan interiors only since the early Mediaeval period. However, the Khasha are known to have occupied the Himalayan interiors up to Nepal, much before the Aryans were seen in the Indo-Gangetic plains. They settled in the western Himalayan region in various localities, where they developed numerous local peculiarities. Thus, as part of the broad racial characteristics and religio-cultural traits, local peculiarities also became manifest among them, and they became known by different local generic identities.

These ethnic communities – the Gujjar, Gaddi and Khasha – have played a very important role in the assimilation of various art and architectural influences from diverse sources, which they could blend to formalise a unique idiom in the wooden architecture typical of the western Himalayan region. The Khasha contribution in that process has

been so definitive that the wood-based architecture of the central part of the western Himalayan region can aptly be defined as Khasha architecture.

These communities will be briefly discussed in the context of their contribution to the development of domestic and religious wooden architecture of this region in the following sections.

The Gujjar

The Gujjar moving with their herds of buffaloes and makeshift household belongings from the Himalayan steppes to the north Indian plains are a common sight. The range of their wanderings is very large. Having pursued a very laborious and rustic nomadic living for many centuries, the Gujjar are now completely oblivious of their hoary and glorious past, when the writ of their ancestors, the imperial Gurjar swayed over the major part of northern and western India.

With the data so far available, a section of scholars, including K.M. Munshi, is of the opinion that the Gujjar are the autochthons of India, who descended from the Yadav. A clan of Gujjar even calls itself Nandvanshi. According to Alexander Cunningham, the Gujjar tribe existed even before the birth of Christ. Due to unknown reasons, they are believed to have migrated from peninsular Gujarat to northern India and settled in the dense jungles on either side of the Ganga and the Yamuna.

Foreign scholars, especially those from Georgia, opine that the Gujjar belonged originally to Central Asia, particularly to Georgia. Georgian scholars Prof Georgi Chogoshvili of the Georgian Academy of Science and Prof Levan Maruashvili of the Georgian Institute of Geography claim that there exists a remarkable similarity between the Gujjars and the inhabitants of Georgia (known as *Gurjarstan* in Persian).

According to Rudolf Hoernle, during the earlier part of the sixth century CE, the central Asiatic races, the Huns and the Gujjar, whose exact interrelation is not yet known, invaded India. Although many Hindu kingdoms and ruling houses in the Indian mainland – the Pushyabhuti of Thanesar, Maukhari of Kanauj, later Gupta of Malwa, Maitraka of Valabhi, amongst others – offered resistance to Gujjar expansionism, yet many other Hindu kingdoms indulged them for their own gains. Thus, the Gujjar could swarm over a vast area in north India, and extend their hold in the southern peninsula as well. According to Vincent Smith (cited in Rose 1970, Vol. III: 300), the Solanki (Chalukya), Parihar (Pratihara), Parmar and Chauhan, the four so-called *Agnikul* clans of the Rajput, were originally the divisions of the Gujjar, to which Rudolf Hoernle

adds the Tomar and the Kachhwaha. While the Chalukya went towards the south, the main chunk of those dominating hordes settled in Punjab and Rajputana. They asserted their might to establish their kingdoms along the Thar Desert in Rajasthan – Takka kingdom in Punjab, west of Ravi, in Mandor, Bhinmal in Marwar, in Jaipur, Gwalior and in the Punjab Himalaya. Ultimately, all the petty north Indian Gurjar kingdoms were integrated by the Pratihar of Kanauj, a branch of Bhinmal (Marwar) dynasty. The Pratihar established their empire over the whole of northern India, from the border of Bihar to the Ravi River in Punjab and the interiors of Western Himalaya. Rajashekhar, the court poet of Mahendrapal, speaks of Mahipal, a Pratihar king of Kanauj, having conquered Kuluta, the kingdom in the inner Beas Valley during the tenth century CE. After perpetual warfare with indigenous princes in north India, they were ultimately absorbed into the Rajput population. The Gurjar found mention in the *Harshacharit* of Banabhat, and they were widely described by Hiuen-Tsang in his travels.

During the middle of the seventh century CE, one of the Gurjar clans, the Pratihar, emerged dominant, followed by the Parmar and Chauhan, and the imperial Pratihar-Gurjar of Kanauj around the middle of the eighth century CE. In the mid-ninth century CE, the Gurjar rose to imperial heights in north and western India under their patriarch Bhoj I. However, after his demise, his son Mahendrapal I not only maintained his father's empire, but expanded it eastwards. His son Mahipal extended it deeper into the western Himalayan interiors. The imperial Gurjars ruled uninterruptedly for about four centuries, after their rise in the sixth century CE. During this period, not only did they hold their kingdom together, but also buttressed it against foreign aggressions, until Kanauj fell under the attack of Mahmud of Ghazni. However, the next three centuries saw them gradually declining due to internal strife and external aggression. By the turn of the thirteenth century CE, the Gurjar were nowhere to be seen in the Indian political scene.

The contribution of the imperial Gurjar and their scions in moulding the socio-cultural and art history of the western Himalayan region has been considerable. However, it has been little acknowledged or appreciated in most writings on cultural history, notwithstanding the fact that the credit for the best wooden architectural and sculptural specimens in the western Himalayan region goes to them. The original part of *Lakshana Devi Temple* and the image of Lakshana Devi may be cited as examples in this regard. Further, it was under the aegis of the imperial Pratihar-Gurjar that the art and architectural traditions of the mainland and the Brahmanic cults proliferated

in the mountainous western Himalayan region. In fact, most of the soldierly Gurjar clans established petty Rajput kingdoms in the mountainous parts of northern India after the disintegration of the imperial Pratihara. Many of them even adopted different Rajput titles to glorify themselves and to be at par with the blue-blooded Rajput aristocracy. Thus, the petty neo-Rajput kingdoms in the western Himalayan region could maintain cordial contacts with their Rajput counterparts in the north Indian plains and establish matrimonial relations with them. This relationship was responsible for not only introducing north Indian art and temple architecture in the western Himalayan region, but also for the proliferation of the Brahmanic pantheistic system. The Brahmanic dominance not only eclipsed and distorted the character of autochthonous nature-based belief systems of the people, but also spread the Mahayanic pantheistic system.

There are conflicting views about the declining days of the Gurjar. According to one, the Gurjar got fragmented into two segments, one segment somehow managed to retain their hold on small territorial pockets. That segment came to be known as the *Rajput*. Incidentally, the term 'Rajput' appeared for the first time in Indian history in the context of Mahmud's raids. In support of that view, one comes across many subcaste names, which are common to both communities – the Gujjar and the Rajput – in the plains. The second segment, uprooted from its land, took to nomadism and adopted buffalo husbandry as its profession. It is believed that they fell to the proselytising tyranny of Aurangzeb and embraced Islam. Having remained incessantly under pressure of harassment, the nomadic Gujjar took to the mountainous interiors of Jammu, where they adopted a transhumant lifestyle. Nevertheless, most of them still recall their Hindu ancestry and follow certain Hindu practices. It is believed that some Gujjar groups spread from Jammu to the neighbouring districts of Chamba, Mandi and Kullu. They came to be known as the 'Jammuwala Gujjar'.

Despite the fact that the Gujjar have now been living in the mountains and valleys of the western Himalayan region for a very long time, they have neither been able to take roots in the soil, nor imbibe any socio-cultural influence from their surroundings or contribute on their own. Under that state of abject self-confinement, the Gujjar lifestyle has remained unchanged and stagnant in a primitive state, which fact is subtly reflected in their rustic *kotha* and *myhara*, in which they live with their livestock, their uncouth dress manners and artless ornaments.

The Gaddi

The Gaddi are a traditional community of the western Himalayan region, about whom fact and fiction, history and mystery have been blended so intricately and repeated so often that what has come down from the oral traditions perpetuated by the Brahman and Rajput Gaddi, is regarded as their authentic history. The ancient history of Chamba (that is, of the Brahmpur kingdom) is paradoxically identified with the history of the Gaddi (Figure 1.5) notwithstanding the fact that they played no role at all in the ancient Brahmpur polity. Scholars have put forth different theories about their origin and arrival in the upper Ravi Basin. All those may be grouped into four time-brackets. According to one tradition, which Mahesh Sharma (*The Indian Express* 8 April 1993) revealed in his paper in the *Cultural History of Himachal Pradesh*, 'the earliest account of Gaddi migration came during the reign of Meruvarman, ca 680 CE, who needed Brahman priests for the new temples he had erected. The earliest immigrants belonged to the Gautam *gotra*, closely followed by a family of Saraswat Brahmans of Bhumipal *gotra*, emigrating from near Bhopal.' Three other explanations are listed below:

- (1) One oft-repeated tradition holds that Brahman and some Rajput clans migrated to the upper Ravi Valley during the regime of Ajaivarman (c. 760-80 CE) in eighth century CE (Punjab Government 1996 b: 71).
- (2) There is a popular saying among the Gaddi, '*Ujadeya Lahore, te baseya Bharmaur*.' It means that after Lahore was deserted (possibly by Muslim invasion) Bharmaur was inhabited. Some Rajput and Khatri clans from the Indian plains are also known to have settled there during the regime of Aurangzeb (1658-1707 CE) in the seventeenth century to escape persecution (Punjab Government 1996 b: 137) – a very convenient pretext to explain settlement of various princes, castes and clans in the western Himalayan interiors.
- (3) According to Ibbetson and Maclagan (Rose 1970, Vol. II: 257), there existed a shepherd and goatherd community of *Gadaria* in the Yamuna zone of Punjab. They later became known as the *Kambalia*, because they adopted weaving of blankets as their occupation. Rose (1970, Vol. II: 257) also writes that there existed a Hindu Gaddi community among the Saini and the Muslim Gaddi in a vast area around Karnal, Delhi and Ambala, a long time ago. To add to what Rose has said, the Gaddi of Bharmaur claim to have migrated to the mountainous interiors of the Ravi Valley in the twelfth century CE and, in fact, they are the

descendants of the old *Gadhaiya*, who were spread out in parts of northwestern India (Goetz 1969: 102).



Fig. 1.5: A Gaddi family on the move

The first three of the aforementioned theories may give rise to certain doubts about their credibility, when examined in the broader socio-cultural composition of the Gaddi community below:

- (a) The tradition of Brahmans having come to Brahmpur from near Bhopal during the reign of Meruvarman is hardly sustainable, because during those days Brahmpur was under the paramount influence of Kashmir not only politically, but also in the spheres of art and religion. On the other hand, none of the epigraphic records indicate that the rulers of Brahmpur or Chamba ever recognised the supremacy of Kashmir. That may suggest that the Kashmiri hold over those kingdoms was neither stringent nor permanent (Vogel 1994: 97). It is indicated that sometime around 1120 CE, King Udayavarman (c. 1120-40 CE) of Chamba

threw off the Kashmiri yoke for good, taking advantage of the internal strife and the Muslim invasion of Kashmir (Punjab Government 1996 b: 63, 81). But how could the Brahman priests of Bhopal, enjoying royal patronage and comfort at Brahmpur, adopt the non-Brahmanic transhumant shepherding?

- (b) If the people who migrated to the interiors of Ravi Valley (from the mainland in the eighth century and then again, after a gap of one thousand years in the seventeenth century) were Brahman, Rajput and Khatri, how could they have renounced their different traditional occupations and opted for the radically different occupation of goat and sheep herding? It will appear rather surprising that sheep-herding had never been the principal occupation of even the native Lohar, Baddhi, Hali, and of some other communities in this mountainous tract.
- (c) There could be a possibility that some Brahmans followed the fugitive cadets of the ruling houses, from the mainland to Brahmpur, but then why should those Brahmans renounce their comfortable and lucrative ancestral vocation and adopt a completely non-Brahmanic and lowly vocation of shepherding? Further, one does not hear about the existence of a Gaddi community in the classical Brahmpur kingdom from the numerous epigraphic evidences. Most likely, even the Brahman families, which had once settled in Brahmpur with their fugitive patrons, also followed them to the new capital town at Chamba, and possibly no one was left at Brahmpur even to attend to the liturgical dispensation at the temples. That situation is indicated from the *Brabmaur Copperplate Inscription* of c. 950 CE of King Yugakāṛavarman (c. 940-60 CE), which does not refer to any Brahman priest, but relates to the Narasimha temple. The text (Vogel 1994, I: 164) of the copper plate states, 'He [the king] informs all officials, every *raja*, *rana*, chief-justice and all house-owners. Be it known unto you, neighbouring country people, landholders and others, who are the eighteen elements of the state. On [the temple of] Narasimha founded by the Queen, the illustrious and divine Tribhuvanarekha, is by a formal libation of water (?) this grant bestowed. Having understood [this], let all the servants of the king, named and unnamed, observe it, so that on the authority of the charter issued by us, he (the grantee) should live and cause [his tenants] to live, without paying a tithe [to the Raja]. Let no one offer obstruction.'

Thus, the first three of the four aforementioned theories about the immigration of Gaddi from the mainland to this region are hardly sustainable. Now, there is a

fourth theory, that of Ibbetson and MacLagan (Rose 1970, Vol. II: 257). A glance at the socio-political scenario in the north Indian mainland during the twelfth century CE would reveal that the country was then passing through the turmoil of internal unrest and external invasions. Different Rajput kingdoms had arisen in western and central India after the collapse of the Pratihar empire. These kingdoms strived to divide among themselves the imperial heritage of the Pratihar, which instilled fear and insecurity in the minds of the common masses. The plundering raids by the Muslims under Muhammad Ghauri had further aggravated the situation at that juncture (Majumdar *et al.* 1963: 277). Under such a volatile condition, the nomadic shepherds might have become soft targets of ruthless loot and killing of their flocks. The unrest in the *tarai* area due to intermittent warfare pushed them further into the Kangra Doon. The people of Kangra, reeling under the shock of the devastation unleashed by Mahmud of Ghazni in 1009 CE, were already apprehensive of the terror-ridden situation in the neighbouring plains. Thus, having sensed fear and insecurity even in the Kangra area, most of those shepherds might have crossed the Dhauladhar and found a safer haven in the upper reaches of the Ravi Valley, while a few of them stayed back in the Kangra interiors, in the western slopes of Dhauladhar. Vijayvarman (1175-? CE) was reigning at Chamba at this juncture.

Whether the ancient Cadaria, Gaddi or Gadhaiya community were the ancestors of the Gaddi community from this region may not be known until proper research is done, but it may be said with due certainty that the present-day Gaddi are the descendants of one of those casteless nomadic-shepherd groups of the Indian plains, who once lived around the Barmer area of Rajasthan. This fact may be inferred from the handmade and block-printed cotton fabric, mirrors, cowries and shells that the Gaddi use for their costumes and ornamentation. Significantly, the use of such printed cloth, shells, and cowries, is unknown to the other ethnic communities of this region, while these articles have traditionally been in use among the nomadic communities of Rajasthan since ages.

According to a popular tradition among the Gaddi of Brahmaur, Jaistambh, a scion of a ruling house of Rajputana, became a wandering sadhu on being banished from his home. While wandering, he happened to reach Kharamukh in the interiors of the Ravi Valley below Brahmaur. Jaistambh found a cave at that place and sat there for meditation to solicit the blessings of Lord Shiva. The Lord was pleased by his arduous penance and devotion, and granted him a set of *topa*, *chola* and *dora*. The three articles eventually

became his outfit, and his followers too adopted the same attire. These fugitives came to be identified as the Gaddi. The tradition is interesting, for it subtly indicates that before Jaistambh and his companions reached Brahmaur, they were not aware of the Gaddi dress. Incidentally, there is mention of another Jaistambh (Punjab Government 1996 b: 69), who was the third and youngest son of Maru (c. 540-50 CE). He is known to have collaborated with his father to establish the Brahmpur kingdom. These customary practices and traditions may bring into focus the fact that the present-day Gaddi essentially had their roots in Rajasthan.

The ancestors (womenfolk) of present-day Gaddi used a particular type of hand-printed cotton fabric in their homeland in Rajasthan. This particular type of cloth has been the traditional manufacture of the Chhimba – a traditional caste of dyers – of Barmer. With the exodus of the shepherding clans from Rajasthan to the north Indian plains and the Siwalik foothills, some of the Chhimba of Barmer also settled at Samba in the Jammu region. Some of them later settled in the villages near Shahpur-Hatali at the foot of Dhauladhar to cater to the demand of their nomadic Gaddi clients. The descendants of those traditional dyers still live in Village Hatali and the adjoining villages in Bhattiyat tehsil of Chamba and the neighbouring Kangra District. They earn their livelihood by hand-printing (block-printing) coarse hand-woven cotton cloth for the *launcharis* of Gaddi women (Handa 1998: 267-68). The Gaddi women are so fascinated by the hand-printed cotton fabric produced by the Chhimba, that this printed fabric has become an intrinsic part of their dress. Dressed in the colourful and frilled *launcharis* made of that cloth, the Gaddi damsels are considered the most beautiful of the hill women for their rosy complexion, sharp features, shapely oblong face and graceful, supple and tall bodies. It was the beauty of Nokhu Gaddin, which captivated the Katoch king of Kangra, Sansar Chand. As a testimony of their love, life-size standing images of Nokhu Gaddin and Sansar Chand, representing Parvati and Shiva respectively, may be seen in the Sansar Chandreshwar Temple in the legendary hilltop palace-complex at Tira-Sujanpur.

Although a Gaddin needs no ornament for her body, for her graceful features, proverbial modesty and chasteness have been her best ornaments; she has an inherent penchant for jewellery, mostly drawn from nature. Among these are the semi-precious stones, wild beads, cowries, shells, feathers, mirrors, tinsels and coloured threads – all crafted by herself. Such items of adornment are drawn, so to say, from almost all corners of the globe. For, the Gaddi have been wandering about almost everywhere

and are keen to liberally imbibe influences from other people. Obviously, besides a flock of goats and sheep, a Gaddi always aspires for a lovely Gaddin, as the following folksong reveals:

*Gaddi charanda bhedan,
Gaddani dindi dhup.
Gaddi jo dinda bhedan,
Gaddani jo dinda roop.*

Translated, this song means the following:

*Gaddi herds goats and sheep,
Gaddin adores (Shiv) with incense.
Gaddi is blessed with sheep,
Gaddin with beauty par-excellence.*

In fact, a flock of sheep and goats is an integral part of a Gaddi's personality, as beauty is part of a Gaddin's.

Thus, having been driven away from their native roots and now living in the highlands of the Ravi Valley for centuries, the Gaddi still wear skin-fitting cotton clothes. They use woollen clothes only as outer garments. This may point to their origin in the cotton culture of the mainland. Against it, the indigenous communities of this region belong to the wool culture. The typical attire of a Gaddi is his proverbial *chola*, a loose woollen overcoat that he wears as an over-garment on his coarse cotton shirt. The indigenous folks in the Himalayan interiors have also been wearing the local variants of that *chola* since ages. The *pheran* of Kashmir, *chola* of Gaddi and of the Kulluvis and *loiya* of the Mahasavis are broadly the same age-old doublets with minor local variations.

Nevertheless, the Gaddi's *chola* is a class by itself. This all-pervasive overcoat is long enough to reach below the knees. Numerous items are tucked in its lappets. Significant among these are needles, threads, flint-cotton, and so on. The *chola* is so tied with *dora* at the waist that it becomes roomy enough above the waist to create a space (called *kbukh* from Hindi *kokh*, that is, the womb) to store essential items. The *kbukh* serves as an incubator for the newborn lambs when the Gaddi are on the move. In the innumerable folds of the *dora* are stowed a *kulhari* (an axe), a *bansuri* (flute), a *runka* (flint-iron), a *mandua* (leather pouch), his favourite *chilam* (a small hookah), a *darat* (an iron sickle) and a host of other items. Most of these indispensable items are decorated

in a simple manner with coloured threads, wild beads, cowries, and so on, turning these commonplace items into splendid pieces of folk art. In and around the *chola*, a Gaddi may carry 40 kg to 50 kg of load and still feel comfortable while walking with his *dhan* or *mal*, that is, wealth – that is how a Gaddi regards his flock of goats and sheep. A Gaddi always carries his load on his back (never on his head like a Gujjar), for miles and miles on the tough mountainous tracks unmindful of rain or shine, heat, cold, day or night without any visible signs of fatigue on his face. The Gaddin is in letter and spirit his better half all through thick and thin. She always equally shares the burden of his tiresome work without a trace of remorse. Perhaps nature has cast the bow-legged body of a Gaddi in a mould different from that of other human beings.

As mentioned before, since the Gaddi originally came from the 'cotton culture', one would find close to their bodies, only cotton garments. The ostentatious woollen over-garments are what they 'borrowed' and 'imitated' from the native communities. However, those costumes and ornaments have now remained exclusively with them for centuries, and Gaddi have now become the rightful claimants of this exotic outfit.

The ancestors of the present-day Gaddi established their new home in the upper Ravi Valley, which eventually came to be known as the 'Gadderan', that is, the home of the Gaddi. In the Gadderan, they initially lived in a compact casteless community, as they had been in the mainland, pursuing their nomadic shepherding vocation. Nevertheless, because of the vast experience and practical wisdom acquired by them during their wanderings in the mainland, they have become very practical. Therefore, to establish their superiority over the native communities – the Koli, Rihara, Lohar, Baddhi, Sippi, Hali, and so on – they feigned to be part of the Hindu caste-system and defined themselves as Brahman, Rajput and Khatri, all upper castes. Thus, a stratified social setup, based on the Hindu caste-system developed among them, minus its rigidities. None of them either adheres to their caste-based occupation or follows the orthodox Brahmanic dogmas, but stick only to the caste labels. Sheep and goat rearing became their full-time vocation, and even today, this is the major support of their agro-pastoral economy. Traditionally speaking, only the upper three castes of the Hindu caste-system come within the ambit of the Gaddi social setup, the native folks are excluded as outcastes and non-Gaddi (Punjab Government 1996 b: 137).

Thus, the people belonging to indigenous communities, such as the Koli, Rihara, Lohar, Baddhi, Sippi, Hali, and so on, are not customarily regarded as Gaddi. Interestingly, while the Gaddi have been maintaining that caste-based facade for others,

they have been practising endogamy within themselves. Brahmans can intermarry with the Rathi, Rajput and Thakur by both forms of marriage. Similarly, Khatri may intermarry with the Brahmans. However, of late, the caste-lines are being redefined and inter-caste marriages are being discouraged to maintain class identity. Nevertheless, under modern awakening, neither is the caste-system being strictly followed nor are the low-caste people being excluded from the Gaddi social setup. Even polygamy has become an accepted institution in the Gadderan area, and all traditional inhabitants of the Gadderan area are defined as the Gaddi. Thus, *Gaddi* has come to stay as a generic identity rather than a class or community distinction.

Because of the sterling qualities of their character, the rulers of Chamba trusted and favoured them over all other subjects of Chamba and granted them certain privileges and preferences. For instance, none of the Gaddi was subjected to *begar* (menial duties), but they owed military service to the kingdom. Gaddi landholders could avail of the special privilege of approaching the Raja directly: bypassing the feudal bureaucracy, if ever they felt that injustice had been done to them. Gaddi had the special advantage of conducting trials of any persons of their community without referring cases to the magistrate at Chamba. Gaddi paid a *bachb dasrit* cess (a special land tax) to the state that ensured that no non-Gaddi could marry a Gaddi woman or keep a Gaddi widow. In case, a Gaddi woman was charged with adultery (which was very rare), she was tried by the *drubiyal*, who exacted a penalty according to the custom (Punjab Government 1996 b: 273-274). The rulers of Chamba had so much confidence in them that most functionaries in the harem were Gaddi. Customarily, on the eve of the coronation of a new ruler, each of the 'nationalities' in the state participated, but on the first day, the raja was dressed and crowned as a Gaddi (Newell 1961: 5). All these privileges created strong ties between the Raja of Chamba and the Gaddi.

In the process of socio-cultural fusion with the native people, and under the prevailing geo-climatic conditions in the highland interiors of Ravi Valley, the Gaddi have imbibed many peculiarities of the native stock through a process of assimilation. Accordingly, their dress, food and living habits have undergone complete metamorphism. Thus, although the present-day Gaddi may not ethnically belong to the earlier, indigenous inhabitants of this area, yet having lived with them in the same environment now for centuries, they have developed strong cultural affinities. Since the ancestors of present-day Gaddi had been nomadic shepherds in their native region in the plains, they found no difficulty in adopting similar occupations as the native folk in the highland tract, where agriculture has never been a sustainable proposition. That may explain why it is

difficult to define Gaddi as an indigenous community, so the term 'tribe' (an abused term) associated with them is a misnomer based on an erroneous use of sociological parameters.

The Gaddi are largely confined to the Gadderan area in the mountainous interiors of Ravi Basin, but they have spilled over to the southern slopes of Dhauladhar in the Chamba (Bhattiyat tehsil) and Kangra area, where they have established their *doghari*, that is, second homes. Such dwellings are known as *dobchi* (Punjab Government 1996 a: 26) at other places in the region. Earlier, those slopes used to provide wintering grounds for their flocks, and a transit-place on their uncharted wanderings in the *doon* and further afield. It may be conjectured that their maiden exodus to the interiors of Ravi Valley from the mainland might have taken place along the mountain tracks across the passes on the Dhauladhar Range, and not through the formal valley route leading to Chamba and from there to Brahmaur along the upstream course of the Ravi River. The tenacious Gaddi have been following these very mountain routes on their seasonal errands ever since, mostly bypassing Chamba.

The Gaddi are among the most colourful, romantic and interesting people in the entire Himalayan region. Being by nature the most affable, liberal and open-minded people, they are readily one of the friendliest people in the world, content with themselves in their own environment and way of life. For such noble qualities, they are usually addressed as *mittar*, a friend. In fact, Gaddi and *mittar* are used synonymously in the local parlance. The other term used for Gaddis is *pohal*. However, both these terms signify different meanings. While the term Gaddi is a generic distinction for the people centred in the Gadderan area, the term *pohal* (called *phogala* in Lahul area) is an occupational distinction for the Gaddi or non-Gaddi shepherd and flock-masters, who generally follow a transhumant or migratory routine. Not all Gaddi are from the Gadderan area, but most of them are *pohal*. The Gaddi *pohal* move between the mid-Himalayan valleys and the outer Himalayan *tarai* belt with the change of season, and no place from Jammu to Dehradun and beyond is out of their reach. That transhumant psychology is overwhelmingly reflected in the planning and architecture of their residential houses, which shall be discussed in detail in the following chapters.

The Khasha

Spread over a vast area in the Himalayan mountainous expanse from Kashgar in the west to Nepal in the east, the Khasha have been a majority race in the western

Himalayan region since the earliest times. In earlier times, they might have remained dominant in the plateau of western Tibet, and subsequently they might have extended their territorial influence down to the Pir Panjal ranges and the inner tracts of Nepal. In this context, the comments of Grierson quoted by Rose (Grierson 1966-68, Vol. IX, Part IV: 373 cited in Rose 1970, Vol.1: 54, fn. 1) that the Khasha and Tukhara were the Iranian inhabitants of Balkh and Badakhashan is significant. He also asserts that the Khasha are the Aryan-speaking people, identified with the people speaking Paishachi language of the Hindukush. The Khasha might have come into closer contact with the India-bound Aryan tribes in that country from where they imbibed certain influences and developed certain common ethnic traits. While in case of the Aryans, the original pastoral traits were superseded by the more sophisticated culture that they developed on adopting settled living in the Indian mainland, the Khasha, confined to the Himalayan interiors, continued with their original pastoral occupations, customs, beliefs and traditions.

The Khasha charted the course of socio-cultural history of this region much before the Aryans were seen in the Indian plains. Having generally remained at the substratum in the socio-political setup since the establishment of the feudal system in this region, they have been responsible for moulding the social, cultural, religious and artistic temperament of this region in their own unassuming and subtle manner by imbibing influences from everywhere in the globe. The decorative devices reflected on their wood-based domestic and religious architecture most eloquently exhibit all those influences in a very subtle manner. Therefore, it would be appropriate if the architectural traditions formulated and patronised by them were defined as Khasha architecture.

The Aryans and the Khasha had originally been pastoral nomads, who had to brave violent blizzards and snowstorms on the high Himalayan mountain passes. In order to ensure safety for their herds from the fury of these elements, they deified them as Rudra, and started propitiating him on the mountain passes by making offerings of stones – the only conceivable offering in that unearthly place. One can still find even today the rituals being performed on the high passes. In the course of racial-cultural fusion between the Khasha and the earlier ophiolatrous communities in the interior valleys, the *Rudra* and the *Nag* cults blended to formalise a unique mountain pantheistic system, in which ophiolatry prevailed. Consequently, the *Nag* cult in the western Himalayan region is more dominant as not only the god of subterranean entities – lakes, rivers and fountains, but also of the weather, rain and clouds. Interestingly, the *Nag* is the most popular device of architectural woodcarving in the wooden temples of this region.

The Khasha do not find any mention in the *Rigveda*. That may suggest that in that nascent period of Aryan colonisation in India, either the Khasha were not considered distinct from the Aryan stock or, being confined to the Himalayan fastness, they escaped the notice of the Rig Vedic Aryans as they remained confined to the Siwalik *tarai* belt and the adjoining Indian plains in the beginning. This assumption also finds support in the fact that the Rig Vedic Aryans did not have precise and specific knowledge about the Himalayan mountain system, and the people who nestled in its numerous valleys.

The Khasha, on the other hand, due to their prolonged and close association with the earlier races and communities living in the interiors, imbibed numerous traits, customs and manners of their native counterparts, under which their lifestyle underwent considerable transformation. These native peculiarities in the Khasha social system made them stand strikingly apart from the Aryans, who had developed and adopted a settled way of life during their stay in the Indian plains. Thus, both of them having started from the same point diverged into two entirely different directions.

Later, when the Aryans embarked upon massive territorial aggrandisement, and the Khasha encountered them, they were also considered as *Malechbb* by the Aryans. As the dominance of the Aryans increased in the inner Himalayan valleys and socio-cultural contact was established with the native communities, the Khasha came to be mentioned repeatedly and variously in later Vedic literature. This mention indicated their induction into the Aryan social setup along with the Jhal, Mall, Nat, Karan and Dravid as the *vratya kshatriya*. In the *Brihat Sambita*, the Khasha are mentioned with the Kulut, the Tangan and the Kashmira. Their occupation of Madhyadesh is also mentioned in the *Puranic* literature. Bringing those native communities within the Kshatriya fold in that age might have been a very thoughtful move on the part of the Aryans to raise a fighting force of the non-Aryan warrior-classes for their territorial expansion under the prevailing socio-economic circumstances. This introduced martial traits in the Khasha social setup, which eventually led them to the evolution of an organised administrative system in the vaguely defined geographical boundaries. The martial traits in the Khasha, however, remained confined to the inter-clan skirmishes among different *khoond* (Khasha warrior clans). There is no instance in history, where they were involved in territorial aggrandisement beyond their mountainous territory. Nevertheless, they stood *en masse* against any aggression inflicted on them. The Khasha, as a race, have been very peace-loving, easy-going, content and self-sufficient people living within their own means and

resources in the western Himalayan region. Elsewhere, one learns about them working as mercenaries. The administrative system evolved by them was a theocratic oligarchy, the *janapada*, which developed out of a compromise between primitive cult-based living and the Aryan monarchical setup. The *Mahabharata* also confirms the fact by identifying Khasha as one of the indigenous oligarchies in the north.

Later, due to the extensive racial-cultural fusion among different communities of the Himalayan region, a uniform socio-cultural system became manifest, in which the Khasha had a predominating role. Thus, the western half of the interior Himalayan region up to Nepal came to be regarded as the *Khasba-desh*, that is, the land of the Khasha, wherein they organised themselves into small village-level theocratic oligarchies. They might have developed into a martial race, asserting their influence over a vast area. This possibility is indicated in the *Kavya Mimansa* of Rajashekhar, which records an instance of the defeat of Ramagupt against a Khasha king. An ancient rock inscription, discovered at Salanu on the left bank of Tirthan River in the Banjar Valley, records the event. It records an episode of an encounter of Ramagupt with a Khasha (or Shak) king, named Chandreshwar Hasti. The names of numerous places in this region, like Khashadhar, Khashapat, Khashawad, Kharshali, and others, associated with the Khasha, may also lend credence to the thesis that the Khasha wielded considerable influence in the interiors of the western Himalayan region, for a time long enough to leave impact in the form of place-names after them. However, the various traditional *janapada* and *gramrajya* started coming under threat of invasion and pressure with the rise of the Guptas in the mainland. The Guptas strove to bring the mountain theocracies and oligarchies under their imperial yoke. In that endeavour, they succeeded only in securing token allegiance from them. However, the process was almost complete under Samudragupta. After the suppression of the various *gramrajya*, the western Himalayan interiors were virtually swarming with people belonging to different occupational backgrounds and cultures, who came along with the regents of the imperial lords or as fugitive cadets from the mainland. These incursions greatly disturbed the demographic structure of the region and rendered the Khasha helplessly outsmarted. The establishment of a dynastic feudal system by the immigrants also dealt a serious blow to their socio-political setup. In the new administrative setup, the Khasha were gradually relegated to secondary and menial positions, while the Brahman, Rajput, Khatri and other people of higher castes among the immigrants succeeded in gaining higher social and political positions. In the process of racial-cultural fusion between the immigrants and the Khasha (Figure 1.6),

the institution of polygamy also kept the latter in an inferior position. Therefore, to alleviate their lot from such a status, the Khasha have been adopting pseudo clan-titles of immigrant upper-class communities.

The Khasha are a great race – simple-hearted, colourful, self-contained, non-aspiring and innocent to a fault. Because of these qualities, they have not been able to rise above



Fig. 1.6: A Khasha couple

the social substratum even in their homeland despite their chivalrous character. They are very fond of merry-making, singing and dancing. During their fairs and festivals, men and women attired in their traditional best, hoisting their colourful scarves, swords, *dangara*, axes, and so on, perform various kinds of group and solo dances to the music of their traditional orchestra. The pageant of colours and ornamentation on such occasions is an enchanting sight. The Khasha folklore and songs are rich in innumerable sanguinary and romantic episodes of regional history. Despite the historical importance of the Khasha folklore, these have so far remained unnoticed and unrecorded. The *bars* folksongs of the Giri-par (trans-Giri) area of Sirmaur District of Himachal Pradesh and the adjoining area of Uttarakhand, record some of the little known, yet very important episodes of the political history of this region.

The mainstay of Khasha economy is agriculture. However, cattle herding, goat and sheep breeding, and so on, also form important occupations. In fact, these people, belonging to the wool culture, have been meeting much of their requirement of clothing from the flocks of their goats and sheep. Besides, many of them supplement their income by gathering herbs and other forest produce. The horticulture boom has brought prosperity to these people, because some of the finest apple orchards lie in the mid-Himalayan belt of this region, where the Khasha population predominates.

THE MID-HIMALAYAN REGION

The temperate biophysical environment of this region is to a great extent identical to that of the region in the south, that is, the sub-Himalayan region, discussed earlier. Under reduced precipitation, the climate here remains largely semi-arid, and the regular snow line draws nearer over the barren, rocky peaks and ridges, which tend to come closer, narrowing the width of valleys and making them deeper and darker. Therefore, the villages are set not on the valley-floors, but generally higher on the spurs of steep mountain slopes. Under the prevailing temperate and semi-arid conditions, the summers are milder and shorter, giving longer lease to more severe winters. The alpine forests, especially in the valleys of Pangi and Lahul have become thinner. This has resulted in shortage of timber, because it is not easily available in the forests and hauling it from the distant forests through the trackless slopes is extremely arduous. Under such conditions, the architectural forms and structural arrangement of the residential houses, temples and monasteries, are entirely different. In a single room all-purpose dwelling

unit, mostly made of thick walls of rough stones and mud, and roofed with mud layers, there are lesser and smaller external openings to keep the interior warm. However, in the wooden temples, roofed with an abnormally high-pitched gabled roof covered with wooden shingles, lavish use of wood may be seen.

The inner mountainous region is divided into different valleys, sub-valleys and terrains, formed by the intermediate sub-ranges, which more or less tend to link the two main mountain systems – the Mid-Himalayan Range and the Great Himalayan Range. Thus, in the northwest, the vale of Kashmir presents a very heterogeneous amalgam of many ethnic strains that have been pouring into it since earliest times. In the Chandrabhaga Gorge lies the Pangri Valley, across the Rohtang-la is the Lahul Valley formed by the rivers Chandra and Bhaga, and towards the east, is the lower Kinnaur in the Satluj Valley. The main ethnic community in the Pangri, Lahul and lower Kinnaur areas are the Khasha, who spilled over from the adjoining regions, bringing those terrains within the fold of *Khasha-desh*. These valley-regions shall be discussed separately in some more detail.

The Vale of Kashmir

The Vale of Kashmir, located in the extreme northwestern corner of the western Himalayan region, is surrounded by a spectacular array of mountain ranges, rising one above the other. These ranges provide an idyllic backdrop to the natural scenic beauty spread on the valley-floor. The Great Himalayan Range encloses it on the north and the northwest, and the Pir Panjal Range separates it from the Indian mainland on the south and the southwest. The Kashmir Valley is spread longitudinally from the southeast to the northwest in a boat-like structural basin at an average altitude of 1555 m above sea level. Of its approximately 13,000 km² geographical area, swampy stretches, lakes, rivers and streams cover more than fifty percent. Along the foot of the Great Himalayan Range flows the Jhelum, feeding the Wular Lake. Jhelum River and its innumerable tributaries have been responsible for shaping the topography of the valley; by dissecting the *karewa* deposits and forming the formation of terraces and lowland swampy areas and several lakes such as the Wular, Manasbal, Anchar, Dal, Haigam and Hokarsar, besides highland lakes such as Gangabal, Sheshnag, Tarsar and Marsar, Kounsarang, Alpathar, Butapathri, Nilanag, Naranag, and so on. These natural water bodies have not only imparted an exotic charm to the Vale, but innumerable tales and legends have also been woven around them. These form a very significant part of the classical and popular lore centred on the serpent cult.

The Vale of Kashmir, hauntingly beautiful as it is, has been the land of paradoxes and ironies throughout its history. Its salubrious, scenic and bounteous setting amidst the wild grandeur of soaring and silvery heights – like an ‘emerald set in pearls’ – attracted repeated invasions. The venturesome hordes ravaged and plundered it, but eventually they became a part of its socio-cultural milieu. It is said that one who came to this valley could hardly leave it unless forced to do so by a powerful invader. In fact, this valley has served as a most congenial and convenient quarantine place for a multitude of venturesome races, which poured into the Indian subcontinent from Central Asia, the Middle-eastern world and the west. The Khasha, Aryans, Greeks, Maurya, Kushan, Hun, Jat, Gurjar, Persians, Pathan, Sikh, Rajput and British, all converged into its sunbathed, lush green and floral ambience in different periods. While some of them made it their permanent home, the others moved further on their ventures and expeditions. Thus, many empires rose, flourished, fell and disappeared altogether. Most of the invading races, keen to perpetuate their own religion and culture, groomed local culture according to their own aesthetic tastes and preferences. In that process, they obliterated the material evidence of preceding cultures, leaving no trace behind, except what is found in ruins or learns from the folklore and literary sources.

Kashmir remained under the non-Hindu rule of the Sultans from 1339 CE to 1586 CE, the Mughals from 1586 CE to 1752 CE and the Afghans from 1752 CE to 1819 CE. During that period, lasting for almost five centuries, the area remained subject to dire political and religio-cultural turmoil. The alien rulers not only destroyed the material evidence of the past culture, but they also strove to replace the contemporary socio-cultural environment of this valley with alien deportment. Consequently, what is to be found today by way of art and culture of Kashmir is only a few centuries old, and it represents an amalgam of the extant native traditions and the alien ones that the foreign rulers from Central Asia implanted.

In this process of implantation, either many bolder aspects of the ancient and traditional Kashmiri culture got suppressed under the later, predominating vigorous influences or have become extinct. Such has been the fate of most of the splendid ancient religious cultural and artistic traditions. The artistic and religious cultural ferment of this valley has always remained volatile under the successive influx of newer thoughts and ideas, and the skills and techniques to render them in plastic form. Nevertheless, the succeeding schools subtly imbibed many finer aspects of the preceding cultures in their fold. That reconciliatory process has been continual at the popular plane, notwithstanding the antagonistic and stubborn attitude of some of the rulers of Kashmir.

Thus, in spite of invasion after invasion, and plunder after plunder; the process of construction and cultivation has been an incessant corollary. In this process, innumerable artistic and cultural currents have met and fused to create a unique artistic, socio-cultural and religious environment, which cannot be defined within the formal and conventional religious-cultural identities. Not only is the present-day population of the Kashmir Valley an ethnically mixed stock, but also their customs and manners, art, architecture and craft, all present a quintessential form of culture, in which the natural grandeur of the valley has also contributed significantly.

With centuries of association with the environment of the valley, the people here have acquired a peculiar sensitivity to the nuances of the colourful ambience of this 'paradise on earth'. It is eloquently reflected in the art and architecture of the valley. The local flora and fauna have also contributed liberally to embellish the secular and religious

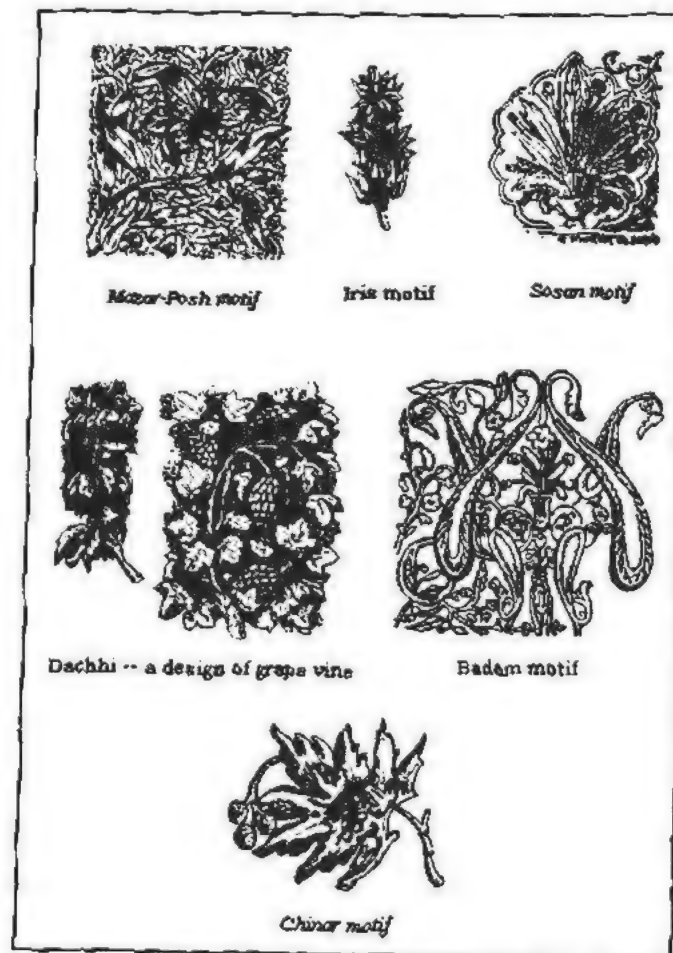


Fig. 1.7: Kashmiri woodcarving designs
(based on photograph in MARG, March 1955, Vol. VIII, No. 2)

architecture with different devices and motifs (Figure 1.7). The Kashmiri architects and artisans have used them very ingeniously and creatively in their architecture.

Nurtured by such diverse traditions, the Kashmir Valley proper has the distinction of establishing its own sub-regional 'composite' cultural identity, flavoured with various racio-ethnic strains, drawn into it from all directions. That composite cultural identity or the 'composite culture' is defined as 'Kashmiriyat' in popular parlance. This aspect is well reflected not only in the socio-cultural behaviour of the people, but also in their art and architecture, which, although generally has distinct local peculiarities, is essentially cosmopolitan and international. Thus, the type of architecture that developed in Kashmir has traits of all the preceding racial-cultural traditions. The term 'Kashmiriyat' may imply certain sinister political designs in the context of politico-psychological happenings since the days of Harsha (1089-1101 CE). From that time onwards, the people have meekly tolerated not only alien dominance in the socio-political matters but also the oppression of the Hindu religious institutions by the rulers. Nevertheless, Kashmiriyat also signifies a harmonious blend of Oriental and Occidental (Central Asian) ideals and values in the realm of art, architecture and culture that have been the vital and basic components in moulding the 'composite culture' of Kashmir. In it may be seen the harsh contours of different orthodox religions and sects being mellowed. Here, neither a Hindu is as staunch as in the rest of the country, nor a Muslim as fanatic, or a Buddhist as orthodox as elsewhere. In fact, a sublime catholicity pervades all sectarian ideologies. The principal Muslim shrine, Hazaratbal, is, in fact, a legacy of the Buddhist tradition in which relics are worshipped, and so is the holy cave of Amarnath, a sacred symbol of Hindu-Muslim faith and amity. This unifying quality may even be found in the names, numerous sacraments, customs and manners of the people. In fact, the Muslims of Kashmir, who constitute 92 percent of the total population in this valley, feel proud of their pre-Islamic Hindu inheritance and that is how they find their roots here. One may hear people saying in a lighter vein in Kashmir, '*Pandit ji Namaz padne gayen bain*': translated, it means 'the Hindu priest has gone to read Namaz'. The sub-regional socio-cultural traditions and art and architectural influences of Kashmir have permeated wider and deeper in the contiguous parts of Himachal Pradesh up to the Beas Valley and radiated further, as far as the Yamuna Valley. The wood-based secular architecture and the wooden temples of this region (and the stone temples as well) eloquently acknowledge these contributions of the Kashmir Valley in their decorative (Figure 1.8) and architectural elements, wherein the fusion of Kashmiri artistic and

architectural influences with the ones introduced directly from the Indian mainland may be noted.



*Fig. 1.8: Woodcarving on the doorway of the mosque of Madani, Srinagar
(based on the photograph in MARG, March 1955, Vol. VIII, No. 2)*

However, it may be clarified that Kashmir has also received wholesome architectural influences from the Indian mainland, and the blend of those influences with the alien traditions formed a sub-regional Kashmiri style. Those influences were crystallised in the popular and classical traditions of Himachal Pradesh and its easterly neighbour, Jaunsar-Bawar, where that gave rise to a distinct sub-regional character. This sub-regional identity is known as 'Pahari' in popular usage. Thus, in the western Himalayan region, two sub-regional identities may be found – the Kashmiri and the Pahari – under the strong coalescing age-old socio-cultural affinity, deeply ingrained in innumerable popular traditions.

The Chandrabhaga Gorge

Confined between the Great Himalayan Range on the north and the Pir Panjal Range on the south, the Chandrabhaga Gorge, also known as the Pangri Valley or Chenab Valley, is one of the most inaccessible terrains of the western Himalayan region. Until

recently, it could only be reached through the seven treacherous glacial passes, ranging between 4300 m and 5200 m above sea level on the Pir Panjal Range. Of these, Sach Pass (4414 m) is the most frequented one in fair-weather conditions for a brief spell during the summer months; for the rest of the year, it remains frozen and inaccessible. So forbidding had been the path across this pass to the Pangri Valley, from the capital headquarters of the erstwhile Chamba state at Chamba, that the officials sent on tour to this area were given special allowance by the state under the head 'funeral expenses'. Now, a fair-weather vehicular road from Udaipur in Lahul to the Pangri area is available, but even this road, with all the dangers of sliding rocks and deep and dark Chandrabhaga, does not ensure safe passage.

The inhabitants of Pangri Valley are known as Pangwals, but the original inhabitants of this area might have been the Khasha. However, in the course of time they were outnumbered by the other people coming to this valley from the neighbouring areas under different compulsions, for instance, it is told that the rulers of Chamba used to condemn criminals to banishment in this landlocked prison. Thus, the present socio-cultural milieu of the Pangri Valley presents an ethnic conglomeration. These people, confined between the high mountain ranges, have remained cut off from the outside world for centuries. Nevertheless, they feel closer to their Kirati counterparts across the Great Himalayan Range in Zaskar area of Ladakh in Jammu and Kashmir and the Lahulis in the upper Chandrabhaga Valley for their socio-economic dealings, than to the Churahi of Chamba on the opposite side of the Sach Pass. This isolation has imparted distinct local characteristics to them. Hinduism and Buddhism have continued to coexist in this terrain, though both are much debased and lax. There still exist several Bhot villages, called *Bhatori*, in the Pangri Valley. Sural Bhatori, Udhan Bhatori and Kumar Parmar are some of those *Bhatori*. The Hindu temples and the Buddhist monasteries are patronised by the followers of both the religions without any distinction, as in the Lahul and lower Kinnaur areas. These people regard the shrines of Guru-Ghantal (Guru Gandhola) and Trilokinath as much Hindu temples as Buddhist *gompas*. It is believed that Padmasambhav (*Guru Rim-po-che*) consecrated both the shrines. Trilokinath temple is an important edifice of the *shikhar* style, which, with the Bodhi temple of Gaya, has retained its Buddhist identity to this day. The architecture of this temple is based purely on the classical canons of north Indian temple architecture. It may be claimed with due certainty that this temple is one

of the very few surviving relics of Indian Buddhism, and that too situated in such a remote and far-flung interior. In the old Buddhist tradition, this shrine is called *bihar* (Sanskrit *vihar*) – a monastery. It is likely that this region might have remained under the strong influence of Indian Buddhism during the Kushan age, much before Tibetan Buddhism was introduced from the north.

The Lahul Valley

Going eastwards from Pangri Valley along the upstream course of Chandrabhaga, one enters the Pattan Valley. Presently, this area forms a part of the Lahul subdivision of the Lahul and Spiti districts of Himachal Pradesh. The Chandrabhaga River is formed at Tandi by the two snow-fed perennial rivers – the Chandra and the Bhaga. The valley formed by the Chandra River is known as the Chandra Valley or the Rangoli, and the Bhaga River forms the Bhaga Valley or the Gara. Thus, the habitable patches in the Lahul Valley are spread in three distinct valley-areas – the main Pattan Valley and the two forking subsidiary valleys – the Rangoli and the Gara. The distribution of population in these valleys is essentially characterised by different ethnic traits and socio-cultural mores.

The ethnic milieu of Lahul Valley is complex and heterogeneous. Scholars have put forth different theories about the demographic structure of this area. Most of them are conjectural, based on the contemporary social features, and with a strong Brahmanic bias. Most of the indigenous people of this valley define themselves as Brahman, Khatri, Rajput, Thakur, Swangala and Kanet, and so on, besides menial communities such as Dagi, Lohar, Barara, Sunyar, Sippi and Hesi, and so on. In fact, so intense has been the racial-cultural fusion in this area that it may presently be impossible to identify a particular racial strain among them. However, these caste-distinctions are not as rigid as in the mainland, being rather flexible. Inter-marriages among the higher-class communities are common; there is no strict distinction among the menial communities either. The conciliatory and flexible attitude may indicate that neither most of the caste-labels, especially the Brahmanic ones, belong to the people by tradition nor are these very old. In fact, these were implanted in this area by immigrants from the mainland during the Mediaeval times. However, the distinction between different communities is reflected in the dress of these people. For instance, the Buddhist women remain bare-headed, while the Swangala, Sippi and Lohari women wear *rontasi* – a saucer-like head-dress, quite similar to the *joji* worn by the Pangwal women.

The people of Rangoli and Gara Valleys present a mixture of the Khasha and Kirat ethnic traits. In fact, Lahul has been a perpetual buffer zone between the rival kingdoms of Ladakh, Guge, Kullu and Chamba since the distant times. It had been changing hands from one kingdom to the other during different periods of history. Consequently, there has been an intense and complex racial-cultural fusion in this land. That has disturbed and diluted the distinctiveness in the ethnic traits of the original inhabitants of this valley beyond recognition, giving rise to unique and quintessential local socio-cultural mores and peculiar manners among its inhabitants, comparable to no other community of the Himalayan region. The Lahuli can outwit anybody in resourcefulness and practical wisdom. Therefore, it is not without reason that Lyall found them solid, conservative, quick-witted, eminently shrewd and sensible (Lyall 1874: 212). Harcourt (1972: 72-73) also found them to be 'shrewd and sharp traders, with far more intelligence and desire for knowledge than have the people of Kooloo'. Further, according to Negi (1976: 113), 'of all the tribals in Himachal Pradesh, those in many of the villages of the main Lahul Valley and some villages of the side valleys are, today, the shrewdest businessmen and the wisest in certain worldly matters'.

Being such a heterogeneous people, the Lahulis today present a conglomeration of diverse influences, almost in every aspect of their social, cultural and religious life, in which neither Hinduism nor Buddhism nor the autochthonous cults have their distinctive existence, but all have contributed to form a multi-cultic system. That distinctiveness has also been reflected in their food habits and costumes. Certain distinct features may also be found in the Lahuli domestic architecture – for instance, the portable *Lahuli chullha*, with multiple cooking stands, which the Moravian missionaries developed and popularised among the people in the nineteenth century. This *chullha* has many advantages. It is installed in the middle of a room, and people can sit and sleep around it and keep warm. Secondly, many dishes can be prepared on it simultaneously and kept warm. Thirdly, it leaves the room smokeless, yet warm. However, the consumption of fuel wood in it is far more than in the conventional hearth.

The Lower Kinnaur

Kinnaur—the land of the fabled Kinnar—forms the northeastern border district of Himachal Pradesh. Located in the head reaches of the Satluj, it demarcates the international border with Tibet (China). This high-altitude mountainous district is divided into two almost equal halves by the Satluj, which enters the district from northeast and, running almost parallel to its northern boundary, leaves it at the southwestern end.

In Kinnaur, two distinct ethno-religious societies may be identified in two different segments, demarcated broadly by the Pangti Nala, next to Village Telangi near Reckong-Peo, the district headquarters of Kinnaur. In fact, Kinnaur is the region where Hinduism of the mainland and Buddhism of the Tibetan world, meet.

The people in the upper Kinnaur, on the northeast of Pangti Nala, are Buddhist by faith and follow its Tibetan form. Biophysically, this trans-Himalayan area belongs to the Alpine zone, which will be discussed next.

In the lower Kinnaur, southwest of the Pangti Nala, semi-arid temperate biophysical conditions prevail. The mountain slopes here are richly covered with a high quality deodar forest, ensuring an inexhaustible supply of timber for building construction. Due to the abundance of quality wood, the art of woodcarving is highly developed and profuse here. The multi-storey residential houses of the people as well as the temples here are lavishly made of wood from foundation to roof, and these are profusely carved. However, important buildings, like the towering citadels and palaces, are made of sturdy composite walls of timber and stone. Such timber-and-stone walls are locally known as the *katth-kuni*. Elsewhere (see Chapter 7 for different types of walls) this type of wall shall be dealt with in detail.

The people of lower Kinnaur follow numerous autochthonous cults, intertwined with Buddhist and Brahmanic traditions. The Tibetan Buddhism entered this area from upper Kinnaur, where it is predominant. However, it gradually became feebler downstream, giving way to the Brahmanised indigenous cultic traditions. This is the land of autochthonous cults, woven around the *Naga*, *Narain* and *Maishur*. However, the archaic characteristics of these cults have been incessantly undergoing transformation under the dominating influence of the Brahmanic beliefs and practices, and losing their traditional vigour. Among the native cults, the cult of *Maishur* is the most dominant one. The *Maishur* cult has been projected as the local version of classical Shaivism by many scholars with a Brahmanic bias, but there is a need to examine this cult in a wider spatio-temporal context. For that purpose, the correlation of this cult with the cult of *Mahasu* of the Giri-Pabar-Tons catchments in Himachal Pradesh and Jaunsar-Bawar *paragana* of Dehradun District in Uttarakhand will be essential.

The bulk of the population in lower Kinnaur belongs to the Khasha stock. Some families of caste Hindus had also settled in the Sangla Valley during the Mediaeval period. None of these families is Brahman, though they might have been responsible for introducing and perpetuating Brahmanic traditions in this area. All the natives of

Kinnaur are generally addressed as 'Negi'. The term 'Negi', in fact, has been a designation for the administrative functionary under the past feudal setup, equivalent to *Mehata* or *Kayasth* in the mainland. Traditionally, only the upper-caste natives of Kinnaur could use this appellation, and its use was not allowed for the lower-class people, such as the *Domang* or *Chomang*. However, this term has lost its traditional import, and it is now applied in a generic sense for all inhabitants of Kinnaur. Nevertheless, traditional selective use of this term has been noted in the Mahasavi cultic region in Himachal Pradesh as well as in Uttarakhand.

The people of Kinnaur have generically been named as *Kinnar* in classical literature. In the hyperbolic narratives of the epics, *Puranas* and other Sanskrit literature, the *Kinnar* have been known variously. The appellations like *ashvamukh* and *kimpurush* given to the legendary *Kinnar* in classical literature may indicate that the people of mainland had only an imaginary and hypothetical knowledge about these people during that age, giving rise to various tantalising fantasies about them. However, it is indicated in the *Mahabharata* that the *Kinnar* offered tribute to the *Pandavas*, which may indicate an Aryan dominance over them. However, the dominance, if any, would have been extremely feeble.

While Brahmanic India felt contented in the voluptuous imagery of the singing and dancing *Kinnar* damsels, the Buddhist missionary-adventurers took the *Kinnar* seriously. They established a purposeful rapport with them. Under the aegis of Kanishka (78-101 CE), the Buddhist missionary activities were extended far and wide in northwestern India. The specific penal provision (*prajika*) for the *bhikkus*, who indulged in sex with the *Kinnar* damsels, lends credibility to the Puranic references to the *Kinnar* as amorous beings, given to singing and dancing. That also indicates that the Buddhist *bhikkus* were active in the *Kinnar* territory as early as the first century CE, or may be even earlier, as the Chinese annals tend to suggest. How far the *bhikkus* succeeded in their proselytising endeavours may not be known, but evidence suggests that the *Kinnar* largely remained wedded to their animistic cults, and the influence of Buddhism could only be seen in the adoption of certain humane qualities by the numerous demonical deities of Kinnaur.

The *Kinnar*, along with the *Gandharva*, appear in many forms in visual art. They have been depicted in the wall paintings of Ajanta and in numerous stone sculptures. In all those works, they have been projected as amorous beings, indulging in dance and music. However, it remains to be seen if the present-day inhabitants of Kinnaur are the descendants of the ancient *Kinnar*, who might have lost their ethnic identity in the racial-cultural fusion with the *Khasha*, or if the ethnic traits of the legendary

Kinnar are still intact in the present-day Kinnaurias. This inquiry notwithstanding, the inhabitants of upper Kinnaur are very fond of music and dancing, and their colourful costumes and ornaments instinctively remind one of their celestial roles as the divine musicians and dancers. The facial features of the people living in the lower Kinnaur indicate a blend of the Khasha and the Kirat (that is, the Mongolian) characteristics.

THE TRANS-HIMALAYAN REGION

Biophysically speaking, the entire trans-Himalayan region, northeast of the Great Himalayan Range or the Great Divide falls in the alpine zone, which broadly begins above the timberline between 3200 m and 3570 m (average 3350 m) and extends up to 4180 m in the western Himalayan region. Spread on both sides of the Great Himalayan Range, this biophysical zone constitutes a sizable geographical area of the two western Himalayan states, Jammu and Kashmir and Himachal Pradesh. While the alpine biophysical conditions prevail only over the higher altitudinal reaches on the southwestern slopes of the Great Himalayan Range, they extend to the entire trans-Himalayan snow-desert. In this zone, species of the wet and moist alpine vegetation are found. Among these, the junipers, willow (*Salix alba* L.), locally known as the *chung*, and poplars (*Populus ciliata* Wall and *Populus nigra* L.), locally known as the *yarpa*, are widely distributed on the steep and rocky slopes, especially on the sunny aspect. However, the upper Kinnaur area, though falling in the trans-Himalayan highland tract, is an exception. The biophysical conditions in this area, though harsh, are not as stark as in the neighbouring Spiti and Ladakh. The landscape here looks greener and the people are comparatively more prosperous. In this trans-Himalayan tract, people use every bit of wood of any kind in various manners for structural purposes.

This highland snow-desert 'possessed of a necklace of radiant snow mountains' is one of the most elevated regions on earth. Spread over Leh (Ladakh) and Kargil districts of Jammu and Kashmir, a major portion of the Lahul and Spiti districts and the upper segment of Kinnaur District in Himachal Pradesh, this area is drained by the Indus River and its tributaries in Kargil-Ladakh area, and by the rivers Spiti and Satluj in Lahul, Spiti and Kinnaur districts. High altitude, climatic isolation and the blinding glare of the snow and ice deposits on the ranges have produced some of the harshest living conditions on earth in this tract, where freezing cold persists even in shade, during the nights, and in scorching heat under the sun. That abrupt variation

in temperature has turned the sand particles here into microfine dust of countless hues, which whirl and float in the air at the slightest agitation. In order to insulate their bodies against such elements and dust, the people here apply copious coatings of animal fat on their bodies and faces. The author could realise the importance of this 'makeup' only when, on his first trip in September 1977 to the Baralacha Pass (4891 m), he found his exposed skin cracked all over and ears and nostrils choked with dry microfine dust. Not only does the rarefied air at this height cause difficulty in breathing, but the microfine dust also chokes the respiratory system. No wooden structure can be found in this vast rarefied snow-desert, which looks more lunar than earthly. The buildings – residential houses and monasteries – are all made of rammed earth and boulders, even the multi-storeyed tall structures are no exception to this rule. In fact, due to the stark shortage of wood in this region, its use is a bare minimum. Nevertheless, this region can proudly boast of having some of the oldest and most magnificent living monasteries of Tibetan Buddhism in the world. The ancient Tabo *chos-khor* in Spiti completed one thousand years in 1996 CE. It is in this rarefied tract that most of the western Himalayan Buddhist monasteries, built in the Tibetan style of monastic architecture, are located.

The winters in this region are very long and severe, but, strangely, people here are most active during those chilling days: they do not remain glued to the fires to doze, but keep themselves busy with numerous handicrafts, social functions and feasting. The monasteries also become agog with numerous celebrations – festivals and ceremonies – during those wintry days.

Come summer, and the snow starts melting on the peaks by the end of May. The water finds its way through countless gurgling rills into the narrow terraced fields on the mountain slopes and in the valleys. Nature seems to wake up from its long spell of hibernation and puts on a green mantle. Coming through the rarefied atmosphere, the sunrays in summer in this region are powerful enough to ripen barley and other farm-produce. Though brief, summers are the most enchanting in this region. The mountain-slopes present an ethereal spectacle of vast green steps as though descending from heaven. The stately poplars majestically swing in the summer breeze in their ceremonial green robes and trees are laden with apples, pears and apricots. It is in this time of the year when one finds all types of off-season vegetables – cabbage, turnip, carrot, cauliflower and others – of extra-large size.

The Mongoloid Sino-Tibetan speaking people largely inhabit the trans-Himalayan region. They occupied the highland trans-Himalayan tract north of the Great Divide

around the middle of the first millennium BCE. These people have been known as Kirat in later Vedic literature and are associated with the other mountain dwelling indigenous communities of this region.

Ptolemy includes the *Kirbedai* or *Kirrhodoeies*, that is, Kirat, among the tribes of Sogdiana (present-day Soghd). He locates them in *Uttarapath*, the northern sector. It is unlikely that the Kirat socio-cultural influence remained confined only to the plateau beyond the Great Divide. These boisterous people are known to have influenced the local population in the mountainous region down to the mid-Himalayan valleys, by introducing some of the practices of their animistic religion, for example, the *Bon-Chos* and the *Bhunda* performance, so common in the Khasha region in the mid-Satluj Valley. Similarly, the institution of *khoond* and the cult of the Pandava among the Khasha may be a Kirat legacy. Besides, there are two well-recorded instances in history about the Kirat (or Kira) invasion of the sub-Himalayan region. One of these is related to the plunder of Brahmpur (Brahmaur in Chamba), and the other of their presence in the upper Kangra area around modern Baijnath, which was named after them as 'Kiragram'. The Baijnath *Prashasti* inscription explicitly records that identity. The primitive religion, the *Bon-Chos*, of the Kirat people had to face a two-pronged onslaught since the eighth century CE. First, it came under pressure of Buddhism introduced by the Padmasambhav-Shantarakshit team on the 'roof of world' in 749 CE. Secondly, Brahmanism from the mainland dominated it. Nevertheless, that religion could survive in isolated pockets in Ladakh, Spiti and Kinnaur. The Buzhan of the Pin Valley in Spiti still follow that religion.

Besides the Kirat, there are some other indigenous communities inhabiting this region. Among those, the Mon, the Dard, the Hunja, the Changpa, the Drokpa and the Buzhan are the significant ones. The Mon may be regarded as the trans-Himalayan cousins of the Khasha. The Mon population may also be found among the people of the remote Hangrang Valley of Kinnaur. The Mon strain may also be found in the area around Poo. The Dard are the original inhabitants of Dardistan or Baltistan. They are known to have settled in Ladakh during the reign of Singhe Namgyal (c. 1590-1635 CE), the most powerful king of Ladakh. The Hunja migrated from the Gilgit region and settled in Zaskar. It is also suggested that they may be the isolated descendants of the Huns. The Changpa are the nomadic highlanders of the Changthang Plateau. Some consider the Drokpa as the purest survivors of the Aryan race. They are concentrated on the northern bank of the Indus. The Buzhan are the inhabitants of Pin Valley in Spiti. Ethnic distinctions notwithstanding, all the inhabitants of the trans-Himalayan snow-desert are ardent followers of Tibetan Buddhism.

DOMESTIC ARCHITECTURE OF THE SUB-MOUNTAINOUS HIMALAYAN REGION

THE SOUTHERN FACE OF THE OUTER HIMALAYAN MOUNTAIN RANGES, WHICH SLOPE down southwards in an undulating profile, is the sub-mountainous region. This zone includes the entire Siwalik foothill region and the mountainous *Giri-par* (trans-Giri) part of the Sirmaur District. Traditionally, this area has remained populated by the Kanet, an agrarian community of the Jammu-Kangra area, extending over the foothills between Jammu in the northwest to Solan District in the southeast, including the foothill districts of Kangra, Una, Hamirpur, Mandi and Bilaspur. The Labana population predominates eastwards in the *Kyarda Doon* (*Paonta Doon*). However, at a higher elevation and in interior parts of this sub-mountainous region, the Kanet are found evenly distributed among the Khasha population. In the *Giri-par* (trans-Giri) area of Sirmaur District and Jaunsar-Bawar area of Uttarakhand, the Khasha population predominates. However, after the Anglo-Gurkha War, many Jat families also settled in the outer parts of this area abutting the plains, in the Una District, Nalagarh tehsil of Solan District and Paonta tehsil of Sirmaur District in Himachal Pradesh and further eastwards in the *tarai* belt of Uttarakhand. After Independence, many Muslims also settled in this region in the *Kyarda Doon*. Thus, the demographic pattern of this sub-mountainous region has been undergoing incessant changes throughout history, and what now exists is a gross heterogeneous amalgam of various communities.

HOUSING PATTERN IN THE JAMMU-KANGRA REGION

In this south-facing zone, the climate largely remains subtropical and humid in the rolling structural basin of the Jammu-Kangra region and the undulating Kyarda Doon, but at higher elevations on the mountain slopes, a temperate ambience predominates. This area is richly wooded with subtropical deciduous and temperate greenery.

Highland Chalet-type Houses in a Temperate Setting

In the lower flatter stretches of the Jammu-Kangra region, people generally prefer deep fronting verandas and extended roof projections to keep the interiors protected from the sun and storm showers. One may find extensive use of stone for the walls. The sloping roofs are covered with fine slate. This observation holds better for the foothill region west of the Satluj in the Kangra-Jammu belt. As a rule, residential houses in this area are double storeyed. For the study of a representative house in this area, the author selected a typical house in Village Hatali, situated on a commanding spur at the foot of Dhauladhar. Although this village administratively falls in the Bhattiyat tehsil of Chamba District, culturally and socio-economically it is closer to Kangra. The setting and the housing pattern of this village is quite similar to that of the adjoining villages of Kangra. With the majestic Dhauladhar forming an idyllic backdrop, Hatali is one of the most scenic villages in the picturesque Kangra region. Writing about the Kangra area located in the shadow of Dhauladhar, Barnes (1926: 4) wrote,

No scenery, in my opinion, presents such a sublime and delightful contrast. Below lies the plain of rural loveliness and repose, the surface is covered with richest cultivation, irrigated by streams, which descend from perennial snows, and interspersed with homesteads buried in the midst of groves and fruit trees. Turning from this scene of peaceful beauty, the stern and majestic hills confront us; their sides are furrowed with precipitous water-courses; forests of oak clothe their flanks, and higher up give place to gloomy and funereal pines, above all are wastes of snow or pyramidal masses of granite too perpendicular for the snow to rest on.

Since the village has ample terraced flat area around, it is spread horizontally in a multi-cluster formation on different terraces. Each cluster of houses belongs to a separate clan or community. The expansion of households of different clans necessitated building of independent dwellings to accommodate larger families. Thus, houses continued to be built around ancestral ones at different times, forming haphazard dwelling clusters.

These clusters, located at different levels, are widely spaced by groves of bamboo, mango, and so on between them. However, these clusters are interconnected with each other by unpaved and stone-paved lanes and bye-lanes. Such a village layout is typical of the Jammu-Kangra area. Each such cluster is known by the title of the clan or community residing there.

The houses in this village, as in the rest of the Jammu-Kangra region, are generally double storeyed, with a plain quadratic layout, and have a spacious open yard (*angan*) in front. The *angan* is generally used for tethering cattle in one corner, but most of it is used for performing different household chores. This front yard is the most interesting part of the house, for it is kept immaculately tidy, duly swept and smeared with cow dung solution almost daily. On festive occasions, it is even painted (Figure 2.1) artistically with *golu* (white earth) and *losti* (ochre). The house and the front *angan* are usually enclosed with a rubble boundary wall. Each house has a wide fronting veranda on the ground floor. This veranda is the most useful and busiest part of the house, because most of the time the family members attend to all sorts of chores there. The rooms are mostly used for sleeping during the night and for cooking purposes.

The rooms behind the veranda are of different sizes, varying according to the taste and requirement of the owner. Generally, rooms measuring 3.04 x 3.65 m or 3.65 x 4.27 m are preferred. On one side of the veranda, an oblong kitchen-cum-dining space, running through the entire width of the house, is made. This kitchen is a multipurpose room, where, besides cooking and dining, utensils, grains and fuel wood are stored. Obviously, most of the indoor activity remains confined to the kitchen. Therefore, to make it commodious, the maximum number of niches and recesses of all shapes and sizes are made in the kitchen walls, which serve as cupboards to keep all sorts of household articles and wares. A hearth (*chullah*) is constructed in the centre of the longer wall so that the family members can squat around it comfortably. No chimney is provided for smoke to escape. Only a fraction of it escapes from the door and the rest keeps on whirling in the interior, blackening the walls and ceiling. Traditionally, the hearth must always be kept alive with a smouldering fire. Extinguishing the fire in the hearth is considered a bad omen. A square spot paved with slates is provided in one corner of the kitchen to serve as a sink (*chala*) for washing utensils. The women also use this *chala* for bathing. The floor of the kitchen is kept slightly raised from the usual plinth level of the house to ensure the sanctity of the cooking and the dining area. Shoes are hence taboo in the house. The height of the room on the ground floor varies from 2.50 m to 3 m.

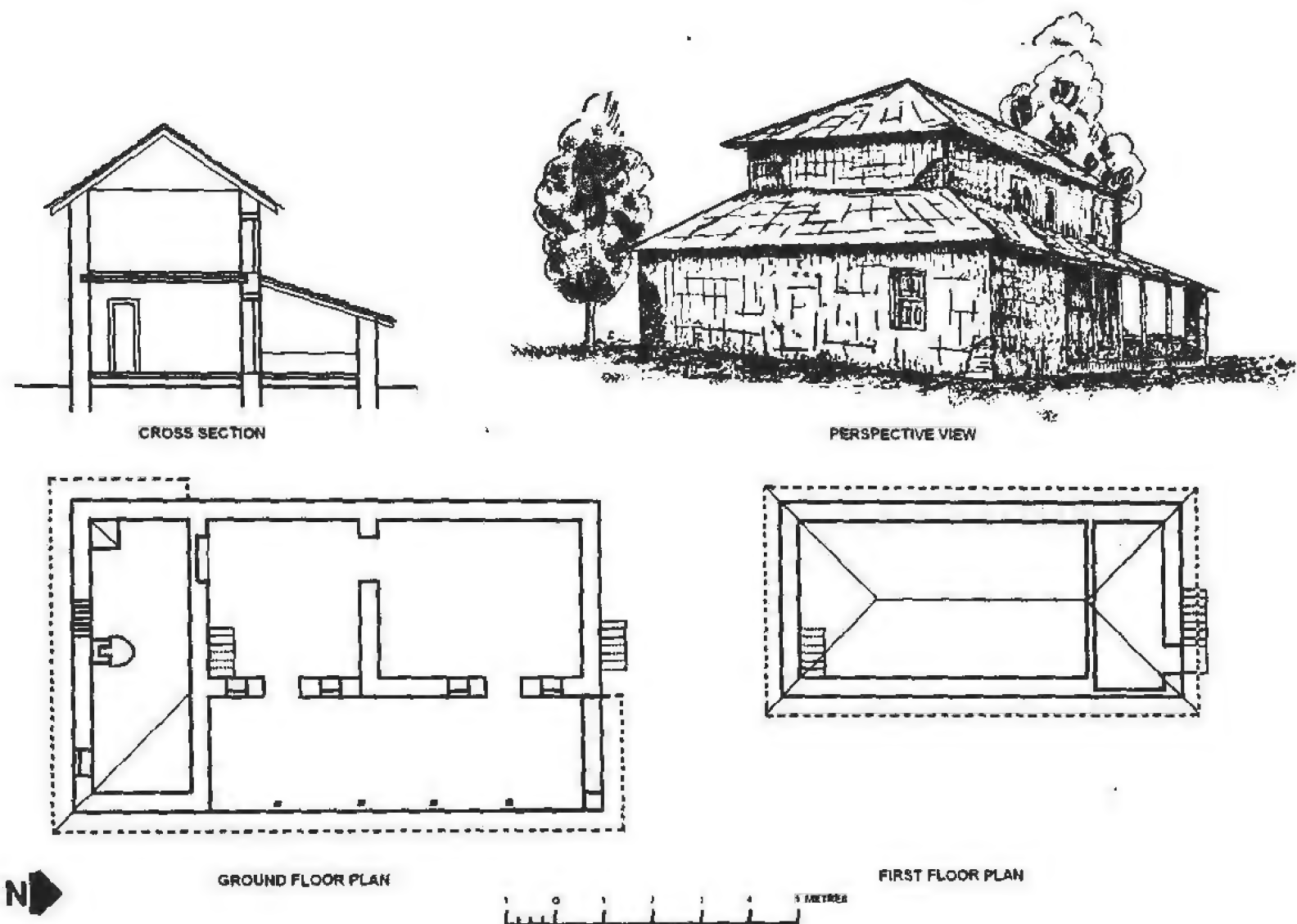


Fig. 2.1: A typical house in Village Hatali

Another floor is raised over the main rooms only, leaving the kitchen and the front veranda single storeyed. The height of the first floor is restricted between 2 m to 2.50 m. A house of more than two storeys is rare, and single storeyed houses are uncommon in this region.

The possible reasons for preferring two storeyed houses may be functional as well as aesthetic. Since the rate of precipitation in the Jammu-Kangra region is very high, rooms on the ground floor may be unsafe due to excessive humidity and dampness, while the rooms on the first floor remain airy and safe, especially for sleeping during the summer and rainy seasons. Further, while a single storeyed house may look sunken and submerged among the thick groves of fruit trees and bamboo, the three storeyed structures may not only be in disharmony with the surroundings, but may also be undesirable when there is ample scope for horizontal expansion.

The roofing style in the Jammu-Kangra area is typical of the area and very beautiful. This style of roofing may not be found elsewhere in the western Himalayan region. The rooms on the first floor are covered with a high-pitched hipped roof covered with fine slates and the single-storeyed portion, which includes the fronting veranda and kitchen, is covered with the lean-to roofing covered with slate. To support the lean-to roof over the veranda, wooden posts are provided on the edge of the veranda at the required spacing. These posts are sometimes placed on the well-shaped corbel stones (*kursi*). Good quality slates are conveniently available in this region from the quarries on the slopes of Dhauladhar, and people use these liberally. The house with this type of roofing has the pleasant look of a chalet-type cottage, which blends harmoniously with the surroundings. However, in the lower part of this region, tiles are also seen in some traditional houses. Possibly, the cartage of slates from the quarries on the Dhauladhar Range to far-off places in the lowland country was expensive, therefore, the local *kumbar* (potter) used to prepare baked tiles for their clients. However, no such tiles are manufactured now.

Good quality fine-grained sandstone is amply available in the entire Jammu-Kangra region and people have been using it extensively in residential houses and sacred and other secular buildings. Despite the superior quality of structural stone, people generally use it only for the foundation and ground floor, but those who can afford it may use stone (or burnt bricks) for the first floor also. However, people generally prefer sunbaked mud bricks for the upper floors for economic reasons.

Whenever one proposes to construct a house, the family Brahman or *chela* (oracle of the local deity) is consulted for selecting a propitious site. He approves the site by

divination and it is earmarked by tying a red-dyed raw cotton thread. Some sweets are also distributed on that occasion. On the appointed day, the foundation trench is excavated about a metre deep. The trench is then profusely watered and left exposed for a few days. It is then vigorously rammed to optimum compaction with *durnat* (an improvised wooden or stone mallet), and then hand-packed with boulders till it is half a metre thick and properly rammed, plugging all gaps and voids with the binding material, earth, sand, grit, and so on. Over such a base, the random rubble stone masonry is laid in courses. People mostly use mud or lime mortar. Normally, no offset is provided in the foundation until the ground level, but one is provided at that level so that the width of the wall remains about 60 cm, which is reduced further at the plinth level to about 45 cm. The height of the plinth varies from place to place. While the height of the plinth is restricted between 22 cm and 30 cm in the rocky, uneven and well-drained locality on the slopes of Dhauladhar, it may be as high as 45 cm to 75 cm in the lowland area, where the ground is flat and susceptible to capillary action of water.

As the wall reaches the plinth level, the location for the doors is earmarked. Placing the main doorframe involves a ritual, which the carpenter performs. He ties a small pouch of cloth containing *dhaniya* (coriander seeds), *supari* (betelnut) and *kusumbha* to the horizontal member of the frame with a *mauli* (auspicious dyed cotton thread). Upon reaching the desired height of the wall, window frames are placed in position. During this process, niches are also left at different spots as per requirement. No lintels or arches are provided over the openings or niches, but a thick and stout wooden board, known as *saldar* or *sardal*, is placed to serve that purpose. When the walls reach the height of the ground floor, wooden beams are spanned across the width of rooms at a specified spacing. On such occasions, ritual worship is also performed. Over those beams, floor joists are placed at about 30 cm from centre to centre. Over the joists, walls are further raised to the roof level of the first floor.

After the construction of the four walls is complete, it is time to lay the roof so that the structure is adequately protected to carry out internal works. The conventional trusses are unknown to the traditional artisans, but they have evolved a simple but ingenious contraption for laying the roof. This under-structure is called *kainchi* in the local parlance. A *kainchi* is an arrangement of a pair of rafters, with or without a tie-beam, placed at specified intervals on the outer walls to form isosceles triangles. To keep these rafters firmly in position, a ridgepole (*lada*) is fixed at the lap-jointed

apex of these rafters. The entire structure is further strengthened by the hip rafters and purlins (*kadiyan*). The placing of *kainchi* in position is celebrated by ritual worship and offerings. On the purlins, slates are nailed from the gable-end upwards, allowing sufficient overlap so that the storm water does not enter inside. A lap of about 15 cm is allowed on the ridge to ensure safety against leakage. Sometimes, semi-circular baked earthen tiles are placed on the ridge to cover the slate joints. The local *kumbar* make these tiles to order. Completion of roofing is a big occasion to celebrate. On that occasion, the *thawin* (carpenter) sits on the ridge, with some flowers, rice and *droob* (Sanskrit: *droob*, shoots of green grass) in his hands, and pours water from a pot on the roof. He does not come down unless some reasonable offering is made to him. Such offerings include clothes and cash.

After completing the external operations, the internal works are taken up. These start with the laying of wooden planks for the flooring, but those who cannot afford wooden planks, use bamboo, reed or even dry twigs and bushes for the purpose. Over that base, mud flooring is provided. To prepare mud for that purpose, well-kneaded clay, blended with the binding material – rice husk or chopped chaff – is allowed to mature and season for a few days. It is then made into *gara* (mud mortar) and spread evenly over the base. When the surface is semi-dry, a floating coat of cow dung is smeared over it to plug the cracks. When the coat is still moist, burnishing with the smooth pebbles (*ghotani*) is done. The floor is then allowed to dry. Usually, a similar process is repeated for making the floor of the ground floor, but the base is made with boulders and grouted grits. Sometimes, people lay flagstones or shingles for that purpose. In that case, mud flooring is obviated, but cow dung coating is mandatory to plug gaps in the paving. While laying the floor for the upper storey, a recess is left in one corner for the trapdoor, which provides access to the first floor from the ground floor through a portable wooden stepladder. However, an external stepladder or regular staircase is also provided.

Normally, windows are avoided on the back walls of the house, but are provided on the sidewall and in the front. These may be with or without shutters, but are mostly provided with iron gratings. Traditionally, no iron hinges were used to fix shutters, but those were held in position by the pivots. Such shutters produce a creaking sound when opened or shut.

For finishing, the external and internal surfaces of the walls are very neatly mud-plastered. For this purpose, clay and binding material are mixed together and well

kneaded. The mixture is then allowed to mature for several days. It is then again kneaded into *gara*. That medium is tightly and closely applied to the surface and finished by hand to ensure a smooth surface. When semi-dry, a floating coat of clay and cowdung solution is applied to seal the cracks. When the surface is dry, white washing and colour washing is done. For this purpose, people use white earth or *golu*, and ochre or *losti*, for white or colour washing. Colour washing is done up to a height of about 70 cm from the ground level. A strip of *losti* is also provided all around on the outer face under the gable, but the rest of the outer surface of the wall is whitewashed. All this painting work is normally done by the women of the household themselves. The women of Jammu-Kangra area are very keen on wall decoration, and to add an aesthetic touch to the house, they painstakingly make interesting linear drawings, depicting numerous floral, faunal and figurative devices. In fact, decorating houses with such drawings is regarded auspicious for the household. The door and window openings are particularly decorated to usher in prosperity and fecundity to the house. On various festive occasions, such as Diwali, weddings, and so on, even the front door and front courtyard is profusely decorated with various earthen colours (Figures 2.2, 2.3 and 2.4). Paints and glasses have traditionally been unknown, but of late, these are becoming common.

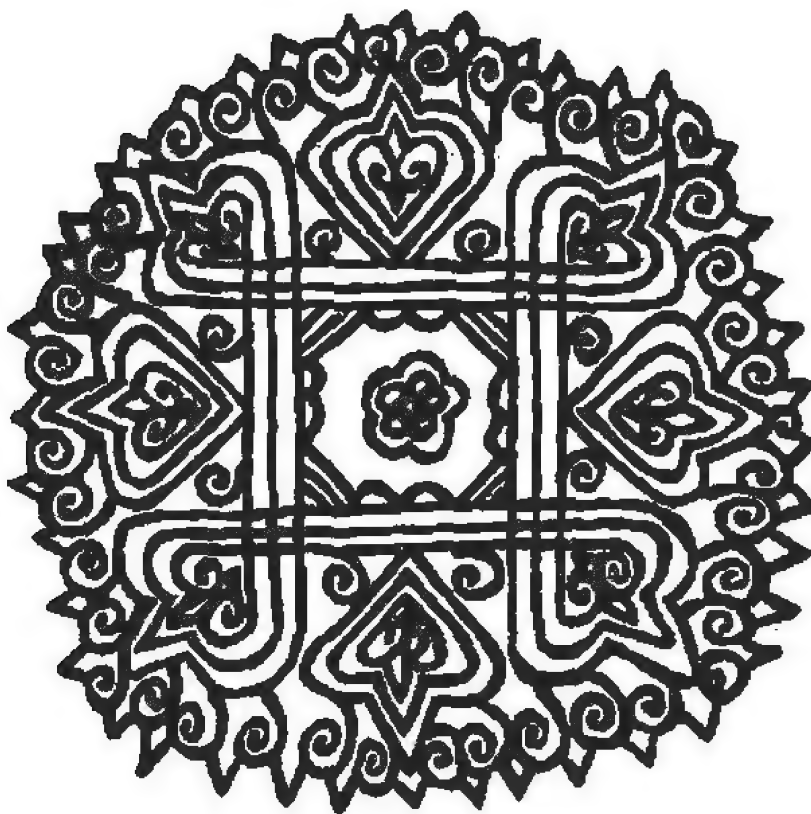


Fig. 2.2: An auspicious floor design for Diwali festival

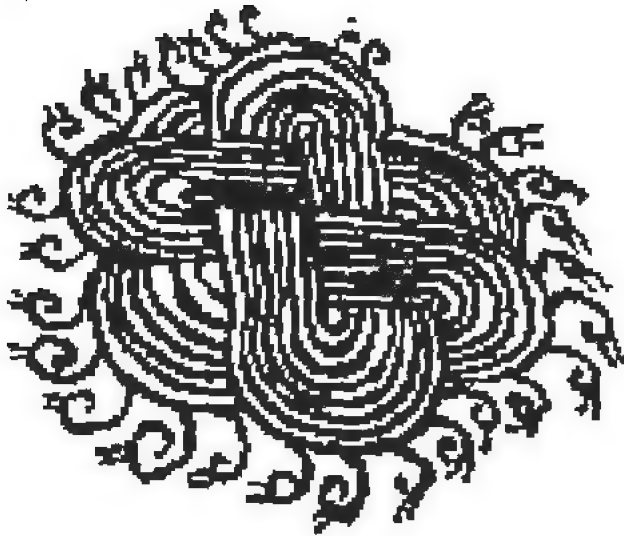


Fig. 2.3: A floor decorative design for ceremonial occasions



Fig. 2.4: Traditionally decorated main door of a house

Lowland House in a Temperate Setting

Chalet-type cottages are preferred in the upland country on the slopes of Dhauladhar, where the soil strata is rocky and well-drained, and structural timber is conveniently available. In the undulating lowland area, where wide stretches of the fertile *kyar* (wet paddy fields) exist and the area is under green forest cover, chalet-type houses are fewer. Under the obtaining humid and damp environment, the use of wood has been considerably minimised. Here, the houses are laid out in a quadrangular form, have the stone masonry plinth as high as 45 cm to 75 cm. Even the four walls of the ground floor may be built of rubble stones. However, sundried bricks may be used on the first floor. In any case, the choice of material depends on its affordability. The mud-based walls can be raised without skilled labour. These can also be maintained by household women in a routine manner, but these are certainly not long-lasting. On the other hand, the construction and maintenance of stone or burnt brick walls (Figure 2.5) which are long-lasting, need skilled masons.



Fig. 2.5: A lowland house made of mud-bricks and stone

While the material of construction and the arrangement of rooms remain almost the same as in the highland houses, the interior here is more roomy and airy, with more windows and larger windows. The verandas of these lowland houses are wider. Further, the roofing arrangement is considerably altered to minimise the use of wood, and so the wooden posts of the veranda are replaced by masonry pillars. Instead of the hipped-roof, gabled roofing is preferred in this lowland area, for such a roof requires less wood and does not let the snow accumulate, thus preventing extra load on the structure. However, care is taken to project the roof at least 70 cm to 80 cm from the outer faces of walls on all sides to protect them from slant showers.

The roof over the veranda is the lean-to type, and made in a casual manner, giving an impression that the veranda does not form an integral part of the original planning, but is a later addition. In fact, up to the plinth level, the walls of rooms and the fronting veranda are constructed simultaneously but after that only the walls of the rooms are taken up to a double storeyed height. The work on the veranda is withheld until the double storeyed structure, including finishing, and so on is complete. The reason may be that the filling of the veranda floor should become thoroughly compacted by the movement of workers and rainwater, while the rest of the house becomes habitable. After the veranda has been properly weathered, it is finished. Heavy stone or brick masonry pillars are erected on the edges at the required spacing (Figure 2.6).

These pillars can be round or square in cross section, depending upon the choice of the owner. Over it, a wooden breastsummer is placed. Over it, the roofing joists are spanned, with their upper ends inserted at a higher level in the wall so that a regular lean-to slope is attained. Mostly corrugated galvanised iron (CGI) sheet roofing is provided over the veranda, while fine slate roofing is a common practice for the main building. In certain cases, even a thatched roof may be seen over the veranda.

The lowland Jammu-Kangra area is generally humid, with numerous irrigation channels and streams flowing around, keeping the sandy loam soil damp, thereby providing the most congenial conditions for termites and other insects to thrive, which are most injurious to wood. Therefore, extreme care is taken to avoid contact of wood with the ground. For that purpose, not only is the plinth kept higher, but also the thick stone slabs, large enough to cover the width of the wall, are placed under the door and window openings so that the sill is further raised. Thus, one has to step up from the veranda to the sill and step down into the room. Thick flagstones are also placed at the plinth level on the outer edge of the veranda.



Fig. 2.6: A lowland stone-built house of the Jammu-Kangra region

Highland Double Storeyed House in a Temperate Setting

Sprawling over the gentle and fertile meadows on the slopes of Dhauladhar, Chauntra is one of the most picturesque villages of the Jammu-Kangra area, in the Mandi District. The scenic charms of this village increase manifold with the snow-capped crest of the Dhauladhar forming a magnificent backdrop; tea gardens all around and the toy-train chugging on the Pathankot-Jogindarnagar narrow-gauge railway line. The bracing mountain-air wafting through the pine, the rhododendron and *ban* forests around impart a salubrious ambience to this village. The climate of Chauntra remains bracing throughout the year. Even in summer, the temperature does not exceed 30°C. Pleasantly enough, a slight increase in temperature is invariably followed by gathering clouds and a soothing downpour. Thus, the climate remains bracing even during summers; winters are sunny and moderate, though the village occasionally experiences mild snowy conditions.

The village is located on the thick layer of porous sandy-loam overburden over the rocky substrata, with the gentle slopes to the perennial rills – Bajgar Khad and

Makkar Nal – on the sides. Thus, the place is secure, hygienic and comfortable to live in. These streams provide uninterrupted water supply for drinking and irrigation purposes. The village is spread in three well-spaced clusters – the Nichala Chauntra, which was the original village. The railway line also passes through these clusters. Later, with the establishment of a tea factory, habitation also developed around it. Further, the village also expanded towards the Mandi-Pathankot highway. People built houses and shops along the highway. Besides, a school building also came up there. Thus, a separate cluster of houses was formed, which is known as Uparala Chauntra. Since ample open land is available on all sides, the village has expanded horizontally on all sides, with houses well-spaced out.

Chauntra is a multi-community village, inhabited by the Brahmans, business, agrarian and professional communities. Among these communities, the Sood business community is economically better-off and the professional communities constitute the lower strata of the village social setup. However, agriculture is the mainstay of the people. Although the layout and architectural pattern of the houses of this village is broadly not much different from the rest of the Jammu-Kangra region, yet the moderate climatic conditions, agrarian livelihood of the people and their economic status are well-reflected in the planning of the village houses. Keeping in view these considerations, one comes across different types of layout patterns here. Thus, most of the houses belonging to the majority peasantry are built on the linear layout. Then, there are the houses with 'L' or 'U' type plan. These belong to the better-off Brahmans, agrarian and professional households. However, there are a few houses with quadratic layout, mostly owned by the moneyed Soods. Such houses are known as the *chowki*. One of the wings of a *chowki*, facing the road or street may be used as a shop, but that is not a common practice. As a rule, all houses in the village are double storeyed, and this holds good for the houses in other villages nearby. While most of the 'L' shaped and linear houses have no covered veranda, all the houses with square (*chowki*-type) or 'U' type layouts have internal covered verandas on both the floors. The covered veranda on the ground floor is known as the *otta*, and the one on the first floor is called *paura*. Every house has a spacious and well-kept courtyard (*angan*). Kitchen gardens and agricultural fields surround most of the houses in the villages. It may be appropriate to discuss the aforementioned types of layouts before the construction techniques are dealt with.

The Linear House

In the houses with a linear layout, there are normally two rectangular rooms on the ground floor (Figure 2.7). These rooms on the ground floor are known as the *obara*. On the first floor, usually a large oblong room is made, but there also could be two rooms corresponding to the arrangement on the ground floor, depending upon the resources and requirements of the family. These rooms are generally very spacious and airy, on the average measuring about between 3.70 x 4.50 m and 4.50 x 6.00 m. The rooms on the ground floor are entered through the open fronting veranda, which, in fact, is an open platform at the plinth level. Each room has a separate door (*bheet*) and a window (*dwari*). Usually, the rooms are interconnected with an internal door. Sometimes, in place of a window, a round or square grated-opening is provided. From one of the *obara*, a single flight stepladder with a trapdoor is provided to the room on the first floor. This *obara* is a multipurpose room, serving as a kitchen and living room and used for sleeping during the night. In order to make space for the utensils and other kitchen items, niches and recesses (*lakore*) are made in the walls. The other *obara* is used for sleeping. The accommodation on the first floor is usually used for storing grains and other household items. For most part of the year, the family is confined to the accommodation on the ground floor. However, living on the ground floor during the rainy season is considered injurious to health. Therefore, people shift to the upper floor during that period, especially for sleeping during the night. The linear house generally has a gabled roof (*dhalwan chat*), covered with slates, but thatched roof (*chhanan*) is also common on the linear houses. However, some hip-roofed houses are also found. Care is taken to project the roof sufficiently beyond the walls to protect them from direct rains. Such a projection is locally known as *chhapraur* or *chhaprauti*.

In front of the house, a sunken and paved rectangular courtyard (*khwala*) is maintained. It is always kept well-trimmed and neat. Not only are the outdoor household chores performed here, but also agrarian operations, like thrashing, cleaning, winnowing of grains, and so on, are done here. A small thatch-roofed hut is made separately at a close distance for the cattle.

The 'L'- and 'U'- shaped Houses

The 'L' shaped house is only an improvement over the house with a linear layout. In fact, the 'L'-shaped house is raised on a linear layout up to the plinth level. Beyond

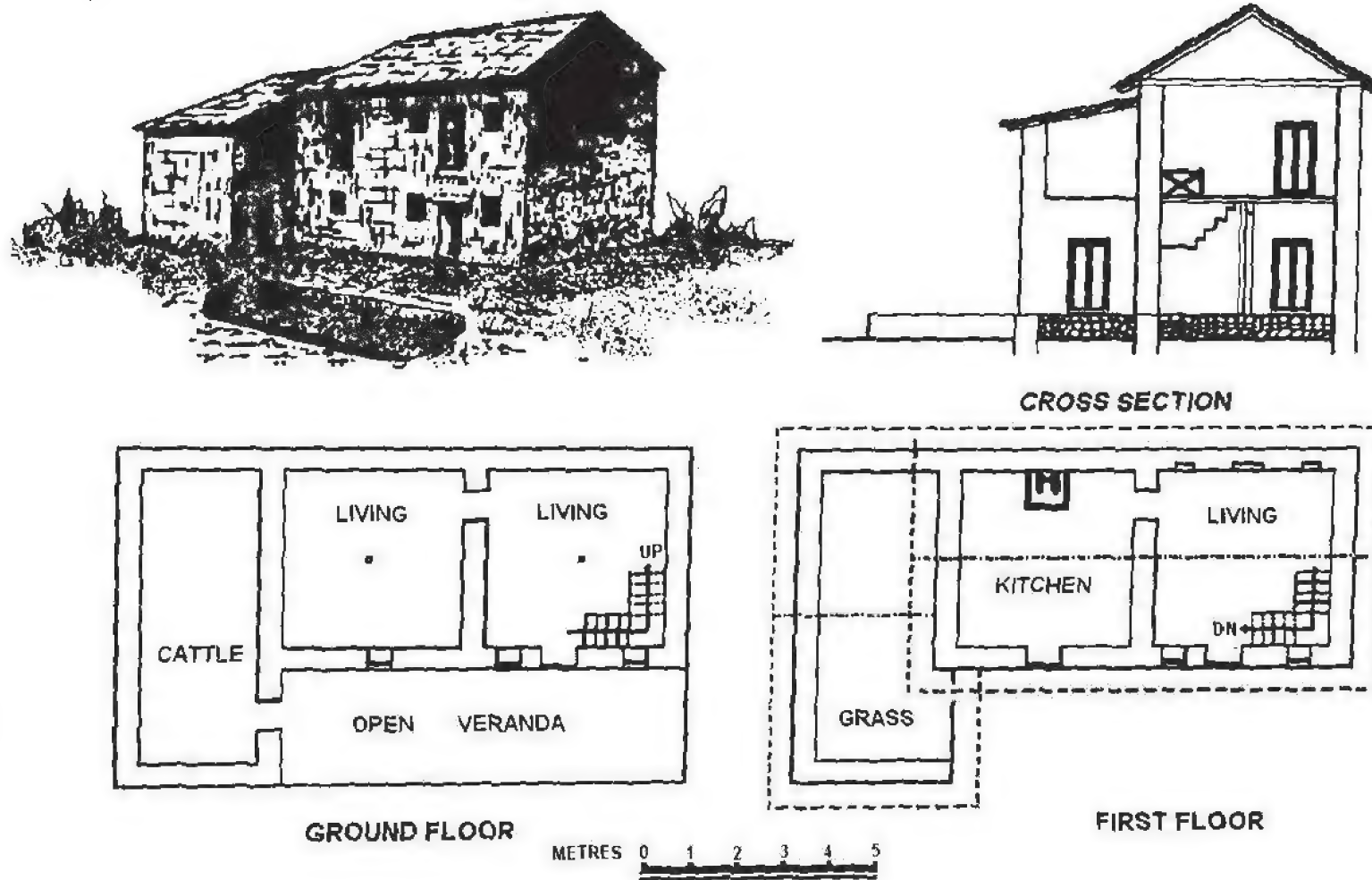


Fig. 2.7: A highland double storeyed house at Chauntra

that, the superstructure is raised to a double storeyed height in an 'L'-shape. In addition to what has been noted above with reference to the linear house-type, an oblong room is added to one side of the house to form an 'L'-shaped superstructure. This additional room runs through the entire width of the building (including the open veranda) on one side. This additional oblong room serves as the byre for tethering milch cattle. The room over the byre serves as a lumber-room for storing fodder, agricultural implements, and so on. No door to that lumber-room is provided, but a part of this room towards the platform on the ground floor is kept open. To enter the lumber-room, a portable bamboo or wooden ladder is positioned on the platform, so that one may climb into it.

There are a few houses with the regular 'L'-shaped layout at Chauntra and the villages around. Such houses have covered verandas on both the floors, from which the rooms behind are accessed through the doors or *bheet*. Access to the first floor is provided through a regular single flight or a doglegged wooden staircase (*sangah*) from one corner of the veranda. In such regular 'L'-shaped houses, there is no provision for the byre, and the cattle are tethered in a separate shed, away from the house. The 'U'-type house is an improvement over the 'L'-type as another wing is added to the 'L'-type layout to form a 'U'-type layout. With the exception of a few 'U'-type traditional buildings, such houses are rare not only in this area, but in the entire Himalayan region. A typical example of the 'U'-type edifice may be the ancient castle-palace at Kotkhai in the interiors of Shimla Hills (Handa 1997: 116-118).

The Chowki-type House

A house built on a quadratic (rarely rectangular) layout, enclosing a spacious and open paved courtyard (*angan*), is known as the *chowki*. The *angan* is a central and important part of a *chowki*, where all the family functions are performed. In the centre of a *chowki*, an elevated ornamental vase is made, in which basil plants (*tulsi*) are grown. Adjoining the *tulsi* vase, a small one-piece tri-stepped votive stone, known as the *mandala*, is installed. On the top surface of the *mandala*, a stylised lotus device is carved to form a magic diagram (Sanskrit term – *mandala*). This tri-stepped votive stone may be a popular rendition of the classical Buddhist *stupa*. The married women of the house are required to perform *pooja* and offer water to the *tulsi* and *mandala* every morning.

The *chowki*-type house essentially is a four-winged double storeyed structure, with all the four wings having a spacious running veranda on both the floors, facing inwards. The

veranda on the ground floor is locally known as the *otta*, and the one on the first floor, known as the *paura*. These verandas remain alive with activity, not only because all the rooms on both the floors have entrance from the verandas, but most of the waking hours of the family are also spent there. On the outer edges (*bheen* or *bheend*) of the veranda on the ground floor (*otta*), artistically chiselled and carved pedestal stones (*kursi*), chiselled to form stylised pots, are placed at the required spacing. On those *kursi*, wooden posts (*thamb*) are erected to support the floor joists (*karian*) and floor planks (*phare*) of the upper storey. On the outer edges of the running veranda on the first floor (*paura*), an ornamental wooden railing (*binag*) is provided between the wooden posts. These posts provide the support for the lean-to roof over the veranda. Depending upon the size of the *chowki*, it may have one or more fixed straight flight or dog-legged staircases on the angles.

Entry to the *chowki* is provided through a gap left in one of the wings. It is called *praur*. Such passage opens into the central courtyard, and one is required to climb up to the veranda to enter into the rooms. Sometimes, an anteroom is provided on the ground floor that has its main entrance from the street. That entrance-room is known as the *wan*. The *wan* is normally enclosed on three sides, but without any wall on the fourth side that opens into the veranda. One may step out onto the veranda from that open side to go inside the building.

The *chowki*-type house is an elaborate building, with a number of rooms on each wing of both the floors. The size of the rooms on both the floors is identical. While the arrangement of doors is similar on both the floors, there could be variation in the arrangement of windows and niches. All the rooms of a *chowki* have separate doors to enter through the fronting veranda on both the floors. These may or may not be interconnected from inside. The size of a *chowki* and the interesting woodwork and stonework in it, which in some cases is very artistic and profuse, may speak volumes about the economic affluence and prosperity of the person, who built it to accommodate a large and extended or joint family during the pre-Independence period. However, with the joint family system now almost obsolete, some of the rooms in such a large mansion may be lying vacant and unused for decades, or being used as lumber-rooms. In many cases, with the division of a family, the rooms of a *chowki* have been divided among the stakeholders. That has disturbed the original arrangement of a *chowki* under the obtaining situation. In certain cases, even structural changes have been made to meet the requirement of the family under the altered conditions, thus distorting the traditional character of the architecture.

The *chowki*-type houses in Chauntra, as elsewhere in the Jammu-Kangra region, belong to the prosperous Sood, Mahajan, Gupta and Khatri, all belonging to the business community. In the mid-Himalayan interiors, even the Brahmans have *chowki*-type houses at many places, as in the Karsog area of Mandi District. Traditionally, these communities had been landowners, who never cultivated land, but leased it out to the cultivators on a crop-sharing basis. Thus, in their *chowki*, one may find granaries and large wooden containers (*kothad*) and bamboo silos (*pedu*) – one example of which is shown in Figure 2.8 – on the ground floor, but no lumber-room or byre for cattle. Some of the households maintain milch cattle, but the sheds for tethering them are built separately, away from the *chowki*.



Fig. 2.8: A *pedu* for storing grains

In case there is no room in one of the wings of a *chowki*, that wing is known as the *naswal*. In the *chowki*, the kitchen (*rasoi*) is always kept on the upper floor in a corner. While the family members may take their food in the spacious kitchen itself, a formal guest is served in the *paura* or the living room (*baitbak*). When a separate room is earmarked in a *chowki* for keeping water pots, that room is known as the *jalaihar*. In one corner of the *paura*, a paved enclosure is made for bathing and cleaning of utensils. Customarily, no toilet is provided in the *chowki*, but a dry latrine (*swari* or *jajaru*) is improvised, separate and away from the *chowki*, for the female members of the household. The males are supposed to ease themselves in the open. The *chowki* is always provided with the slate-covered gabled roof over the rooms and the lean-to roof over the verandas.

Materials and Method of Construction

Once a proper site near the fields, where water is available, has been selected, the foundation (*niyuni*) trench is excavated after due rituals. Since the soil strata in the locality

are sandy-loams and porous, the foundation has to be dug to a depth of one metre or more until hard strata are found. The width of the foundation is kept between 60 cm and 75 cm. The bed of the foundation is watered and rammed with a heavy wooden or iron mallet or *durmal* to ensure thorough compaction and evenness. That is followed by the hand filling (*bharti*) of foundation with coarse boulders to a thickness of about 20 cm to 25 cm. The filling is thoroughly rammed, watered and the voids are filled with sand and grit. People prefer to leave the foundation exposed to the summer rains so that it is properly settled and weathered, after which it is further rammed.

On an auspicious day, a ceremony is performed to lay the foundation stone after which the work progresses further. The thickness of the wall up to the ground or plinth level is normally kept the same as the width of the foundation. However, of late people are opting for offsets in foundation for economy. Ordinarily, dry masonry is used and the walls are raised up to the plinth level, that is, to a height of about 45 cm. At that stage, the floor area between the walls is thoroughly soaked with water and filled with the soling material, such as grit, flints, brickbats, and so on. It is then thoroughly rammed so that the filling is at level with the walls. The doorframes (*dwar-shakha*) are then erected on the plinth wherever necessary. Placing of the *dwar-shakha* is followed by a ritual worship, during which a red *mauli* (raw cotton thread) is tied to it.

After the doorframes have been fixed in position, the masonry work is continued further. Similarly, window frames (*chaukhat*) are also placed in position when the walls reach the window level. A single window is considered sufficient for each room. As the work of raising walls continues, niches and recesses are left at proper places. Around Chauntra, good structural stone is not available. People mostly use the local mica-laden white hard granular stone for construction of walls up to the plinth and for the outer walls of the ground floor. In situ moulded, sundried mud-bricks of 25 x 12 x 6 cm size, are used for the inner walls on both the floors and the outer walls of the first floor. The thickness of outer walls is normally 45 cm, but the internal walls on both the floors are usually made of a single brick thickness.

When the construction of walls is complete up to the first floor level, a wooden beam (*shaiter*) is placed across each room on the shorter span, over which wooden joists or *karian* are spanned. Where bamboo is available, people use it for *karian* to economise, for structural timber is not easily available and is very expensive. The height of the rooms on the ground floor of the houses in Chauntra and other neighbouring villages is about 2.50 m, for the first floor, it is about 2.25 m.

After the basic *woodwork of the first floor* is complete, the walls are raised further up to the roof level in a similar manner as for the ground floor. In the process, doorframes (*diwar-shakha*) and window frames (*chaukhat*) are placed in position and the niches and recesses, where required, are provided.

After the walls have been raised up to the roof level, work for roofing is initiated. For the gable roofing, the extreme side walls are raised further to form structural gables to support the ridgepole (*lada*). While the houses with linear, 'L'-type and 'U'-type layouts may be provided with gable or hipped roofing, the roof over the *chowki*-type houses has to be necessarily gabled, with hips and valleys on the corners. The local traditional *baddhi* prepare roofing infrastructure by positioning rafters (*bala*) on the *lada* and the side walls, duly fixed in position by the tie beams, at the required spacing. Those contraptions are called *kainchi*. The ends of the *bala* project sufficiently from the outer edges of the walls to form projected gable-ends (*chhappraur* or *chhapprauti*) on the sides. Over the *kainchi*, purlins (*karian*) are placed at the spacing that varies depending upon the roofing material, which may be slate or thatch (*chhanan*). Wood is mostly used for the roofing substructure, but some people use bamboo for economic reasons. Normally, the ceiling is avoided in most of the houses for economic reasons, but in the *chowki* type houses, the ceiling may normally be found in a few rooms. The space formed between the ceiling and the roofing is known as the *tarba*, the loft.

The work for finishing and internal fittings is then taken up. The floor of the ground floor is generally made by a thick layer of the *gara* (thick mud mortar) over the soling layer of grits, flints, and so on. Over the semi-dry *gara*, a thin layer of cow dung is applied. In the first floor, mud flooring is provided over the *phare* or wooden planks or the bamboo scantlings. Sometimes, no mud flooring is provided over the *phare*, and these are kept exposed. The walls are also plastered (*maidagi*) on both sides with *gara* and finished with a floating coat of cow dung solution. When the *maidagi* is dry, the walls are whitewashed with the local white earth (*makol*) or colour washed with *losti*.

Housing Pattern in the Subtropical Arid Environment

There are certain pockets in this region, where the soil is composed of the rugged conglomerate strata. Such strata can hardly retain water to sustain cognisable vegetation except the sparse subtropical thorny and semi-desert vegetation and the local variety of bamboo and grass, such as *bhabhar* or *bagar*, *lamb* (*Heteropogon contortus* Beame.), and so on. Structural wood is scarce in such localities. Therefore, people mostly use bamboo

(except for the door and windows) in place of wood for their residential houses in such areas. In fact, bamboo is a staple material for flooring and roofing purposes.

Most of the residential houses in the villages on the Sikandra Range, which roughly separates Mandi, Hamirpur and Bilaspur districts of Himachal Pradesh, fall in an arid and hot geo-climatic region. Although for construction of walls, good quality stone is available in this area, people use it only for foundations, and occasionally for the ground floor also. For the first floor walls, normally sundried bricks are used or rammed earth walls, locally known as the *matkanda*, are made (Figure 2.9).

Kot is one such village of the Jammu-Kangra region, where subtropical arid environmental conditions prevail for most part of the year. It is a medium-sized multi-caste, martial village of the Sarkaghat Tehsil (Mandi District). The village is sprawled over the narrow and rugged terraces of a sub-range of the Sikandara Range.



Fig. 2.9: A typical house in Village Kot in the subtropical arid environment

This Sikandar Dhar reaches down to the Bakkar Khad that forms the border between Mandi and Hamirpur districts. This seasonal stream is notorious for its treacherous behaviour, as a popular saying goes:

*Bakar khad sab khadan di ranee,
Hiyunda dhoop na taundi pani,
Barasatee jan kyian bachanee.*

Translated, this saying means:

Bakar stream is the queen of all streams,
Winters here are sunless, summers dry,
The pluvial spells are treacherous well nigh.

In fact, this seasonal stream remains completely dry for most part of the year, but during the rainy season, it is unpredictable and at times, not fordable. The rugged landscape of the area is devoid of any type of natural vegetation. People have planted trees on the edges of their terraced fields and around the village to ensure the supply of fuel and fodder for their livestock. The village has scattered habitation, roughly forming three irregular clusters on three separate hillocks. Two of them, belonging to the higher castes, are in close proximity, and the third one is at a small distance. However, all those clusters are interconnected by several footpaths. Customarily, the houses of the higher caste families are the double storeyed and slate-roof structures, but the ones belonging to the lower castes are generally single storeyed, thatched roof dwellings. However, the class distinction no longer holds good and such distinction is now based more on economic considerations. One may find even the double storeyed houses covered with thatched roof (*kareen*) and single storeyed dwellings with fine slate (*chakka*) roofs, belonging to any community.

Thus, in this village, two types of houses may be found. There are a few single storeyed houses, but most are double storeyed. Again, very few houses have thatched roofs; most of them are covered with fine slates. Very few houses also have CGI sheet (*teen*) roofing. People prefer slate roofing, for these provide better insulation against the scorching heat of summer and the chill of winter, while the CGI sheet roofing gives little protection against either. Further, the slate is a permanent and maintenance-free roof-covering material, while CGI sheets are prone to weathering and rusting; however, thatched roofing is a potential fire hazard. For these reasons, the people of this subtropical and arid area, including Bilaspur District and part of Solan District, prefer double storeyed houses covered with slate roofs (Figure 2.10).



Fig. 2.10: A clustered arrangement of houses in the subtropical setting

These houses are laid out in the well-trimmed quadrangular or 'L-shaped' form and are neatly built, with a stone or slate paved spacious *angan*, which generally is oriented towards the northern aspect (depending upon the local site condition), so that it may remain in shade for most of the summer months. People of this area spend most of their daytime hours in this courtyard, and some even prefer sleeping outdoor in the *angan* during the summer nights, when there is a cool breeze in the courtyard. In order to protect the interior from exposure to the sun, no windows are provided on the southern aspect, but ample openings are provided on the opposite side.

The houses in this subtropical and arid environment are roomy and well-ventilated, but normally without the fronting veranda. Even when a veranda is provided, it is never open, but enclosed, with only small windows and an entrance door. While the house is without a veranda, all the rooms, at least on the first floor, have to be interconnected.

Internal access to the first floor may be provided from one of the rooms on the ground floor through a stepladder or *sangah*, and a trapdoor. However, such an internal arrangement is uncommon. People prefer external access from the courtyard to the

first floor. For that purpose, a solid masonry straight-flight staircase is made. Under the staircase, a spacious elevated niche is made for safely keeping the water pitchers. Since water is a precious commodity in this arid tract, not a drop is allowed to be wasted. People procure water from their specified borrow pits, locally known as the *khati*.

These *khati* has been the only traditional source of water for the people of Kot and many other villages in this arid belt. A *khati* is made by digging a deep and inwards slanting pit in the conglomerate strata on the hill slope. The drops percolated through the conglomerate strata on the side and roof of the pit gather to form a pool at the farther and deeper end of the pit. Thus, fresh and clean water is collected. In order to protect the water from pilferage, the mouth of the *khati* is provided with a sturdy battened and braced bamboo door and locking arrangement. Each family of Kot has its own *khati*. In the event of marriage or other social functions in a family, water is borrowed from the *khati* of other households, which the family is customarily supposed to return to those households on similar occasions. Now, when piped tap water has been provided by the government, people prefer drinking water from the *khati*, for they consider it better than the piped supply.

In a double storeyed house, the rooms on the ground floor (*aour*) are normally used for kitchen (*rasoi*), storage (*ohari*), living (*baithak*), and so on. The room for the kitchen is positioned closer to the niche under the staircase, where water pitchers are kept. On one corner of the kitchen, a slate paved sink (*chala*) is made for cleaning utensils. Since a watermill (*gharat*) is rare in this arid tract, one may find a pair of grinding wheels (*ghultoo*) installed in one corner of the kitchen in every traditional house. For washing clothes and bathing, an enclosure is always improvised in one corner of the *angan*. The corner room on the ground floor of a double storeyed house is normally used as cattle shed (*gobar*). In case of single storeyed houses, a thatched cattle shed is made at a distance from the house.

For constructing a house, a site nearest to the fields is selected. Construction work is taken up after performing the usual religious rituals, after which the site is levelled and foundation trench (*kbali*) is excavated about a metre deep. After proper ramming, it is hard-packed with boulders and grit, gathered from the bed of the Bakkar khad. The walls of coursed or random rubble stone are raised up to the plinth level, that is, about 30 cm or 45 cm above ground level. Over the plinth, most of the walls are made either of rammed earth or of sundried bricks. The rammed earth wall is known

as the *bhittwali chinai* or the *matkanda*. During the process of constructing *bhittwali chinai*, care is taken to leave openings at proper places to subsequently fix the frames for the doors (*duar*) and windows (*taki*). The sundried bricks made in this area are usually of 30 x 10 x 8 cm in size. In some instances, where good quality stone is easily available, houses, made of the random or coursed rubble stone masonry in mud mortar may also be seen. Of late, stone or brick masonry in cement mortar is becoming popular for building construction. The width of the wall is usually 45 cm.

In a double storeyed house (Figure 2.11), when the walls have reached the first floor level, the infrastructure for the first floor is laid. Since wood is scarce in the area, normally bamboo strips are closely spread over the wooden joists. Over that bamboo 'planking', 5 cm thick layer of mud is spread. The construction of walls for the first storey is then carried out in the manner already described.

With rare exceptions, the roofs of houses in this area are of the hipped form: with slopes on all the four sides. These roofs are covered with fine quality slates. In some cases, thatched and CGI sheet roofs may also be seen. No slate quarry is available in this area, but the people import these slates from distant quarries. These quarries are

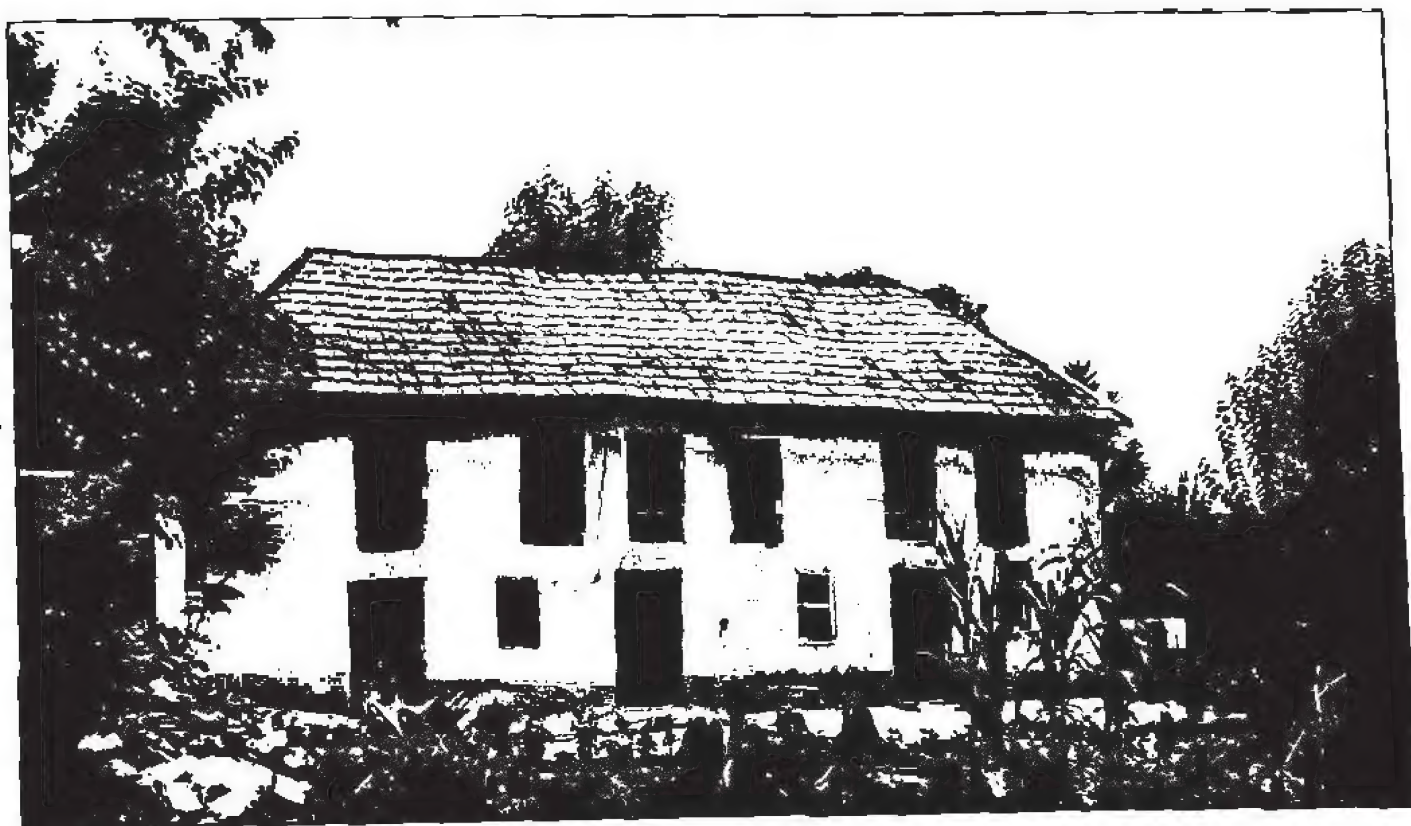


Fig. 2.11: A façade of a double storeyed house in the subtropical setting

on the Dhauladhar slopes in Mandi and Kangra districts. The roofing infrastructure is made of bamboo, with minimum use of scarce wood.

After the house is roofed, finishing work is taken up. The outer and inner surfaces of the walls are neatly plastered with mud. The womenfolk of this area are experts in plastering work. They not only ensure satin-smooth surfaces, but also execute interesting relief decoration on the matte earthen surface, depicting floral, faunal and figural motifs. The peacock is one of the favourite motifs of such wall decoration. After plastering, the entire outer surface is treated with a fine coat of the locally available smoke-grey clay. This clay is very soft and sticky when wet, but becomes powdery when dry. Therefore, women mix rice starch (*lugari* or *pitchh*) with that clay to prepare a floating solution. Thin coats are repeatedly applied with grass-brushes (*kutchi*). The interior is either whitewashed or treated with a coat of smoke-grey earth.

Housing Pattern in the Doon Highlands

The geo-climatic and biophysical scenario is different in the upland area east of the Satluj, in Solan and Sirmaur districts of Himachal Pradesh, which the author has defined as the Doon highlands. The villages in this hilly tract are usually located in a linear formation on different terraces along the contours, but where flatter locations nearer to the natural water sources are available, houses in clusters may also be found. Because the agricultural holdings of the villagers are generally located in a scattered manner, away from the habitations at various isolated places, many villagers have built their houses nearer to their fields on the rocky terraces, which normally are unfit for cultivation. Although the land in this tract is largely unsuitable for traditional agriculture, yet the people have been growing coarse grains, especially maize, and millets, with rain-fed irrigation. To protect their crops from wild animals, people build a single-room shed on the strategic corner of their fields to keep watch over the crops. That improvisation is locally known as the *doghari* or *dogari*, that is, the second house. In fact, it is a farmhouse of sorts. One male adult member of the family lives in that *doghari* to keep watch over the crop. For the remaining period, that shed is used for keeping bullocks and dry cattle.

This hilly tract, abounding in the resinous *cheer* pine forests on the slopes, remains generally warm to hot and dry, with only moderate rain. It may snow occasionally on the higher reaches during the peak of winter, but the snow does not remain here for long; within an hour, it melts away. The overburden of stiff, dry and gritty red-ochre

clay, deposited on the limestone base, is shallow and rocky in parts. This clay is very sticky and water-resistant. It does not allow water to percolate into the subsoil. Thus, the rainwater simply flows down through the seasonal storm channels and streams into the Sirsa in Nalagarh area and the rivers Markanda and Bata in the Kyarda Doon. Even the occasional layer of vegetable mould has in no way been able to improve the quality of this soil for agriculture, and it has been unsuitable even for traditional dry farming. Because of poor returns from agriculture, people have been seeking other vocations away from their homes for livelihood. Some households also subsist on dairy farming. For that purpose, they prefer buffaloes to cows. Mostly, people tether buffaloes in the open yard away from their houses. Sometimes, an open grass-roofed shed is made to keep the cattle during the cold winters.

Nevertheless, this sterile red-ochre clay has been good for building purposes, for this clay has good structural qualities. When wet, it is soft, sticky and pliable, thus, easy to handle, but when dry it becomes very hard, compact, and strong and has a very good bonding quality. At many places, good structural sandstone is also available in this area, which the locals use to build their houses. In this area, one may generally find single storeyed dwellings, built along the mountain slopes in a scattered manner in isolated settings, but a few double storeyed houses may also be found. In fact, the economic boom lately ushered in by the cultivation of non-traditional and off-season cash crops and vegetables has not only bound the people to their homes and fields, but also encouraged them to import new construction techniques and materials from outside to build their 'modern' houses. Therefore, no wonder that one may find somewhere a large and beautiful modern house set in this parched and rugged landscape.

For the study of a typical traditional residential house of this area, a house in Village Ber-ki-Ser in the suburbs of Solan town, was selected. This village is inhabited by a heterogeneous community of people, which largely subsists on the mixed economy, in which agriculture plays only a supplementary role. Under such compulsions, the extended or joint family system, as are found in the agrarian families, is almost missing here. People prefer the self-contained nuclear family system. This aspect is very strikingly reflected in the planning aspect of houses in this village. There is no open threshing-yard around the house nor is there any lumber-room or byre to keep the livestock. However, under the urban influence, there is an independent attached bathroom and store, but the toilet is still wanting. Obviously, the inmates ease themselves in the open, away from habitation. This village and a typical house shall be looked at in a detailed manner in the following paragraphs.

The Village Ber-ki-Ser is a multi-caste village, predominated by the Brahmans and Rajputs. One clan, known as *Bhatra* (possibly derived from the Sanskrit word *Bhat*, meaning Brahman), claiming Brahman ancestry and from Sialkot (in Pakistan), is known to have settled in this village after Independence. Although the houses are clustered at one place in a compact manner in this village, yet the ones belonging to a different community are vaguely separated by the bye-lanes. The houses belonging to the lower caste are distinctively spaced apart from the upper caste houses as a matter of customary practice, but the caste-based stigmatic distinction is hardly visible. The village, being nearer to the town with a motor road nearby, is well-connected by the paved lanes and bye-lanes passing through the fields and grassy slopes. Most of the houses in the village are single storeyed, with flat earthen roofs, facing the sun, as elsewhere in this highland tract of the Doon. Normally, all houses in the village are inadequately ventilated and dimly lit. Except for a few small windows on the sidewall, there is no opening other than the doors to the rooms. Thus, the rooms are comfortable to live in even in this hot and dry climate and are relatively warmer during the wintry chill, when the icy precipitation frosts the environment outside.

On an average, a house has three to four rooms, with an attached bathroom. One of these serves as a multipurpose living room while the others are used as a bedroom, a kitchen and a store-cum-supplementary bedroom. This much accommodation is considered sufficient to lodge a small non-agriculturist nuclear family comfortably. One may also find in a few houses a small enclosed veranda (*bramdah*), a small open and paved courtyard in front or on the side that serves as a thrashing-yard (*khaliban*) and storage space for fuel wood and grass. In many houses, women improvise the hearth on the isolated corner of this courtyard. During sunny days in winters and the cooler morning and evening hours of summers, women prefer cooking meals in the leisurely surroundings of this outdoor kitchen, while enjoying the company of the neighbourhood womenfolk (Figure 2.12).

Material for constructing a house is amply available locally. Good grey-coloured structural sandstone is available everywhere in this rugged hilly region. This stone can be finely hammer-dressed and chiselled. Because of the availability of good structural stone, very good professional stoneworkers are available in this region. Similarly, red ochre and stiff clay is easily available in the vicinity of the villages. This clay has excellent binding and water-resistant qualities. Properly pulverised, sieved and mixed with binding material: cow dung and pine needles (*chalaroo*). When mature, it makes an



Fig. 2.12: An open-air kitchen

excellent all-purpose *gara*. Good structural wood is, of course, scarce in this region, and people are obliged to use any type of wood – the resinous *cheer* pine, *sal*, *semal* (*Bombax ceiba* L.), *tooni*, *kharak* (*Celtis australis* L.), *tali* (*Dalbergia lanceolaria* L.), *am* or *ambi* (*Mangifera indica* L.), and others, depending upon the availability. Although none of these species is as good a structural timber as deodar, yet people make do with these species for the structural woodwork, which, obviously, is very simply made. Therefore, the use of wood is restricted only to the plain doors, windows and the rough-hewn square-cut joists, posts, beams, and so on.

The formalities for constructing a new house here are slightly different. After a suitable site is selected, the village Brahman is consulted. The Brahman prepares a horoscope of the proposed house, known as the *griba-kundali*, and finds out the most auspicious date and time for starting construction.

Initially, a piece of land is levelled and the foundation is dug to a depth of about half a metre. It is then filled with coarse gravel and levelled. This operation is followed by a brief religious ceremony. The owner of the proposed house brings the *griha-kundali*, wrapped in a red piece of cloth (*kand*) and places it within the layout of the proposed building. After performing *pooja* of the site (*bhoomi-pooja*), the foundation stone (*shila*) of the building is laid. The size of the foundation stone is duly prescribed in the *griha-kundali*. It is not necessary that the foundation stone should form a part of the structure. It has to be laid at the place prescribed by the Brahman, and could be laid even at a distance from the proposed house. In one instance, the size of the foundation stone (*shila*) as prescribed in the *griha-kundali* came out to be seventeen *angul* (finger widths) long by 8.50 *angul* wide by 4.25 *angul* thick. This was required to be placed one *bath* (span of an open hand between the tips of thumb and little finger) and 210 *angul* away from the proposed house towards the *agney-kon*, that is, the southeast. On that occasion, the traditional musicians, locally known as the *turis*, are invited to play auspicious musical notes. *Gur* (unrefined brown sugarcane jaggery) is distributed among all present on the occasion.

However, at times, people construct their houses according to the site condition and how it suits their means and requirements, without bothering much about what has been prescribed in the *griha-kundali*, based on the traditional *vastushastra*. For instance, in the *griha-kundali* of the house under study, the Brahman had prescribed that the proposed house should have rooms (*biyoond*) towards the east with a fronting oblong enclosed veranda (*chakhandee*) and the entrance towards the west. However, what the owner constructed was a spacious four-roomed house facing southeast, with an independent kitchen and bathroom and fronting open veranda, but no *chakhandee*. Obviously, under the prevailing site conditions, one has to compromise on the prescriptions of *vastushastra*.

After the religious rituals are over, the actual construction begins. Since the soil stratum is normally hard and rocky, the excavation for the foundation is not taken deeper; about half a metre depth is considered sufficient. The foundation-trench is then filled with coarse gravels mixed with the locally available gritty clay, and thoroughly rammed. Over that foundation 'concrete', stone masonry work is completed without any offset up to the plinth level. The height of plinth is normally not more than 30 cm. Stones are laid in mud mortar. Above the plinth, the thickness of walls (*bhitt* or *kandh*) is normally reduced to about 30 cm to 45 cm after leaving an offset on the outer side for the outer walls. The internal walls are raised with offsets on both sides.

All walls are made of properly hammer-dressed stones laid in mud mortar. Of late, some people are even using chisel-dressed and random rubble stones to enhance the architectural appearance of the houses. While no pointing or plastering is done on the external surfaces of walls as a general rule, since mud mortar used for laying stones is strong enough to bind stones together and keep the wall secure, yet people are increasingly opting for the use of cement, and one may find walls treated superficially with cement pointing. Affluent people are even using cement mortar for laying stone masonry, notwithstanding the fact that the local gritty calcareous clay is as good a bonding material as the cement mortar.

While the work of raising the wall continues, the door frames and window frames are placed in position as per requirement. However, no opening is provided on the back wall, because in most of the houses, as in the present case, the back wall abuts on the hill profile, giving an illusion of the house emerging out of the hill slope as its organic part. Such houses are locally known as the *daraba*. The back rooms of such houses are pleasantly cool even during the severest summer months and comfortably cosy during winters. Normally the size of the door (*dwar*) is kept at 90 x 150 cm and that of the window (*mori*), at 60 x 90 cm. In the traditional house, one may find only a few windows, but a good number of niches (*teeri*) and recesses in the internal walls. The height of rooms in this area is abnormally high when compared to the ones in other places. Here the height is customarily kept between 3.00 m and 3.70 m so that the interiors may remain cool, even in summer. In these houses, generally, fronting verandas are completely enclosed to form a large oblong room, called *chakhandee*, from where access to the rooms at the back is provided. The *chakhandee* is the most important portion of the house, where the inmates spend most of their waking hours. It is also used as a multipurpose living room. In some cases, in place of the *chakhandee*, an open veranda is also provided.

The flat roof (*chat*) of these houses is made of well-rammed impervious clay that keeps the interiors dry and insulated from the rains. For laying the mud roof, wooden joists (*kari*) are placed across the shorter span on the walls, about 15 cm to 20 cm apart from each other. On these joists, 1.25 cm thick wooden planks are laid to form a ceiling (*mairb*). Dry grass or a lining of pine needles is provided over the *mairb*. Over that, a thick layer of *gara* is evenly spread. Finally, the entire roof is covered with a thick layer of rammed fine clay. A mild slope to one side is provided to drain out the rainwater. In some cases, instead of the flat mud roof, CGI sheet roofing (*chadray-di-*

chhat) is also provided. If this is done, the outer walls are raised to form a parapet over the iron sheets so that these remain firmly pressed on all sides. The CGI sheets are laid with only a minimum slope to one side for the water to escape, so that the roof is virtually flat.

The internal surfaces (and sometimes the outer as well) of the walls are plastered with mud mortar. The floor is also earthen, made of a thick layer of mud over the soling. The houses are whitewashed occasionally with *makol*. To prepare the whitewashing solution, the *makol* is dissolved in water and strained to separate insoluble residue. Some quantity of salt and gum or rice starch is then added to the solution. It is then ready for use. The exposed woodwork – the doors, windows, ceiling, and so on, are painted with red ochre with the traditional painting medium. To prepare the 'paint', ruddle (*geru*) is dissolved in water. That solution is then applied on the exposed woodwork and allowed to dry. When properly dried, a coat of mustard oil is applied to make the paint water-resistant and lasting.

Housing Pattern in the Giri-par Area

The rugged highland Giri-par (trans-Giri) area of Sirmaur District, is a mysterious country, where religious rituals are deeply steeped in sorcery and totemic orgies. Every aspect of life here is influenced by these religious rituals and the predominating cult of Sirgul. Even in the construction of houses, the local belief-system has a decisive role to play. For instance, after the foundation has been ceremoniously laid, homemade liquor is distributed, and until the foundation for the entire building is dug and the masonry work completed up to the plinth level, day and night vigil is kept at the worksite, lest somebody plant a pernicious charm that may cause misery to the owner and his family. The owner even takes his meals at the construction site and keeps awake guarding the foundation through the nights with fire burning beside him. Apart from the owner or the *baddhi*, who is essentially a mason-cum-carpenter, no one is supposed to enter the area within the four walls of the proposed house until the walls reach the plinth level. During that period, even the labour engaged for the job is required to pass on the material – stones, mud mortar, and so on – from outside across the trench to the *baddhi* or the owner, standing on the other side. The *baddhi* is supposed to work from the inside only. If any one violates this customary practice, the *baddhi* has the right to claim compensation, which may include anything the intruder carries on his person, be it a cap, a coat, a blanket, a shirt or a stick.

People also believe that a snake circles around the proposed house. Therefore, at the time of laying the foundation stone, the *baddhi* secretly lays the first two stones with a gap in between to ensure a safe passage to the ominous snake. Incidentally, the snake is popularly regarded as the lord of the subterranean sources of water. The possible reason for such belief may be this: since considerable hill-cutting is involved in the development of the site for a house in this area, there may be a possibility of exposing the underground flow of water that may cause problems for the proposed building. Therefore, leaving a gap between the stones in the foundation may be a naïve way to drain out such subsoil flow. The people have been following this age-old practise despite the fact that such a possibility may be very rare in this rugged and dry area. The author has found such a practice elsewhere, in such localities where the chance of encountering subsoil water is very remote.

In fact, most of the parameters of construction here are decided by the *baddhi* – a hereditary professional artisan. The *baddhi* is architect, engineer, mason and carpenter – all-in-one in charge of construction and the final authority to decide matters related to the work. Normally, he is averse to any suggestion and does not entertain any change in his design. In fact, people also regard such interference ominous. The customary practice for the *baddhi* is to have his own team of two-three labourers to assist him. He normally undertakes construction work on a lump-sum contract basis, settled for a double or a three storeyed house, having a room on each floor as the unit. With an increase in the number of units, the unit rate is also proportionately increased. Such contractual conditions also imply that the proposed house shall be a double storeyed building, extending only linearly. House construction in this area is usually taken up in winter, when the *baddhis* and the villagers are free from their agrarian chores (Figure 2.13).

For studying the housing pattern in the Giri-par area, a typical house of Village Rājāna was selected. This is a sizable and important multi-caste village of the Giri-par area of Sirmaur District, some 15 km of steep ascent away from Dadahu (Renuka). The village perched on a rugged mountain spur at an altitude of about 1530 m above sea level, is divided into two independent parts: the thickly populated upper part is called Uparala Rajana and the lower one is known as the Nichla Rajana. It appears that these two localities came into being to differentiate between the higher and lower caste communities. This caste-based segregative village pattern is a common feature of not only the Giri-par area, but one comes across that type of village setup everywhere in the interiors.



Fig. 2.13: A village setting in the Giri-par area

Besides arduous agriculture on unyielding terraced fields, people of this village are engaged in various other supplementary vocations, such as weaving, basket making, carpentry, black-smithy, and so on. Most of the villages in the Giri-par area of Sirmaur District, such as Rajana, are located on a higher altitude on the southwestern sunny aspect. Thus, summers are generally pleasant and bracing, but the winters are cold. It occasionally snows during winter, but the snow does not stay for long on the sunny slopes. In such a biophysical scenario, while normally the higher altitudinal temperate species are not found in this area, the trees of the lower altitude varieties are aplenty. Among these are the *amaltash* (*Cassia fistula* L.), *ban* (*Quercus leucotrichophora* A. Camus), *brass*, *cheel*, *danri* (*Cedrela* spp.), *kharik* (*Celtis australis* L.), *sal*, *sani* (*Terminalia alata* Heyne ex Roth.), *shisham* (*Dalbergia sissoo* Roxb.) *semal*, *toon*, and so on. Most of these species are not structural wood, but people make do with these species for building their houses

and making a variety of agricultural and household implements. The *cheel*, *danri*, *kharik*, *sal*, *sani*, *shisham*, *semal* and *toon* are the common wood species used for building purposes (Figure 2.14).

The traditional houses at Rajana, as elsewhere in the Giri-par area, are made of stone, mud and timber to accommodate large extended or joint households. However, there is an increasing tendency among the affluent people to build 'modern' modular reinforced cement concrete (RCC) framed structures for their nuclear families. Because



Fig. 2.14: A typical house in the Giri-par area

of pervasive urban influence, wood is being increasingly replaced by synthetic materials, like plywood, strawboards and modular plastic fixtures for almost all types of structural woodwork and indoor furniture.

As a rule, the houses in this area are built in a linear layout, along the contour facing the valley, at a location unsuitable for agriculture. Normally, the houses in this

area have two or three floors. The dark and stuffy rooms are entered through the small doors, having an abnormally high sill. The height of this door does not exceed even 1 m, and one is obliged to bend on one's knees to enter through it. Therefore, one has to climb up and step down to enter into the room. The rooms are without any windows or ventilation, and if at all there is any, it is screened with pierced wooden blinders.

The houses are normally built as freestanding structures, clear and away from the mountain profile, which is generally buttressed by dry-stone breast. Normally, sufficient levelled ground is not available on the narrow and rugged terraces, but people develop plots by partial hill-cutting and filling. To retain the fill, dry-stone retaining walls that form the edge, are made on the valley side. Thus, a sufficiently wide-levelled ground is available for the proposed building, with ample frontage of about 3-4 m. In that open space, a spacious sunken and paved rectangular courtyard is made, locally known as the *gabana*. The *gabana* literally means a threshing-yard but besides threshing, other agrarian chores are also performed here. On the outer edge of the *gabana*, about a metre wide and half a metre tall parapet is made which serves as the village thoroughfare, linking other houses at the same level.

The common materials used in the construction of houses are stone, local clay, slates and wood. The rough schist stone that is plentifully available in this area is neither good for masonry work nor can it be sliced into thin shingles. Nevertheless, people make use of it for construction purposes, being very thick, using it for roofing material is commonly avoided. Therefore, for the roof, slates are procured from such quarries in the area, where better quality of schist layers are available, as from Village Bhalad, about 20 km away from Rajana. Generally, people make do with the locally available wood, but there are instances of importing deodar wood from the distant forests. The material required for construction is collected through community participation, locally known as *baila lagana*, that is, a call for voluntary labour. On the appointed day, the volunteers of all communities reach the owner's place, where duties for collection and carriage of materials are assigned. For days, the volunteers are busy carrying stones, timber, slates, and so on. During those days, the owner feeds all the volunteers. When sufficient material has been collected, the owner arranges for a grand feast, in which rice, *patinda*, (leavened bread), *gulti* (mutton), ghee, *shakar* (jaggery) and homemade liquor are freely served. This institution of reciprocation through community participation is not only confined to house building, but most of the ceremonial events, social functions, and agrarian and farm activities are accomplished in this manner, throughout the interior

of the Himalayan region. This institution has been known by different names at various places, for instance, it is known as *dar*, *kewar* or *saret* in Chamba, *jwari* in the Mandi-Kullu area, *haila lagana* and *tthela* in Sirmaur District, *daruch* or *buara* in the interiors of Shimla District, and so on.

After the site has been selected, the foundation is dug to a depth of about half a metre. Thick and flat schist stones are laid in the bed, over which dry stone masonry is started. Usually, the foundation is completely filled with stone masonry, but at times, the masons leave offsets also so that the width of the wall at the plinth level is about 50 cm to 55 cm. The plinth height itself does not exceed 15 cm to 25 cm from the surrounding ground level. Since the stone used for construction is poor quality schist, it cannot be dressed to proper shape, nor does it take any mortar. It is laid flat in irregular courses in such a manner that the faces of the wall are smooth and flat. The gaps and voids in the wall are packed with flints. Since this kind of masonry wall is vulnerable to all sorts of stresses and strains, it cannot be raised much higher without proper provision for a uniform distribution of the superimposed dead load. For that purpose, sturdy wooden wall plates (*bad*), tied with the cross-joists, are placed on both the edges of the wall. The vacant space within the framework is hand-packed with pieces of schist stone so that the surface is smooth. Such wooden frames are provided throughout the length of the wall after every 30 cm to 45 cm of schist stone courses. To ensure that the wooden frames remain gripped in position, these are joined with sturdy vertical wooden posts (*thaili* or *shor*), secured tightly to the wall on both sides. This type of wall construction technique is typical to the Giri-par area and the adjoining Jaunsar-Bawar area of the Dehradun District of Uttarakhand. A simple but striking example of such a contraption may be the tower-type temple of *Shani Devta* at Kharshali, on the way to Yamunotri in Uttarakhand (Handa 2003:83). While the wall is being constructed, the doorframes are placed at proper places and niches and recesses (*bhaiday*) are provided in the wall, where required. Normally, no window is provided on the ground floor.

When the walls have been raised to a height of about 1.50 m, that is, the height of the ground floor, a wooden wall plate is placed on the outer edge. The rest of the wall thickness is covered with stones so that the top is uniformly smooth and levelled. Over that smooth surface, the floor joists are placed across the room over the shorter span. After that, the work of raising walls is continued until about 1.20 m height, that is, the height of the first floor. During that process, doorframes (*dewad*) and window

frames are placed in position and niches and recesses made in the walls. Again, a wooden wall plate is placed on the outer edge, over which wooden joists are spanned. Beyond that, the side walls are taken up to form a gable for the roof (*chbappar*).

At the apex of vertical triangular walls, a ridgepole of rounded section is placed, over which rafters are placed at regular spacing. Over the rafters, wooden planks are fixed with nails. Over those roofing planks, thin slates are nailed, starting from the gable end to the ridge. At the ridge, an overlap of about 20 cm is given. A small opening (*chhindwasli*) is left on the roof at a proper place to serve as an outlet for the smoke. This opening can be closed when needed by sliding a slate over it.

After the external work is complete, the internal work is taken up, which starts with the flooring (*maid*) work. The floor level of the ground floor (*mando*) is usually kept a little lower than the plinth. It is finished with the flat schist stones. The ground floor is usually used as a cattle shed (*obara* or *kando*), but in certain cases, it may also be used for living, and mostly for sleeping and storage. In that case, the paved floor may be coated with mud and cow dung solution, which process is periodically repeated. For storage purposes, large wooden boxes, which usually occupy most of the room space, are made on the side along the walls. These storage boxes are known as *kothar* or *badai*.

For the flooring of the first floor (*uprad*), wooden planks are placed over the joists. No mud flooring is provided and the planks are left exposed. However, these are regularly scrubbed in the morning to make them look fresh and clean. The upper floor is the regular living area, where the family spends most of its time. Here, one room is earmarked as kitchen (*rosyane*). In one corner of the kitchen, a thick and large slate stone is firmly fixed on the floor over the mud cushion. On that raised platform, the hearth (*chullbada*) is made. The other rooms are used for living purposes. Sometimes, the loft (*kandal*) above the ceiling is also used for miscellaneous storage. To reach the first floor, an external masonry staircase is provided, which opens into a central room, open on one side. It is known as the *jbee*. Sometimes a cantilevered extension is also provided to the *jbee*. Access to the other rooms is always from the *jbee*.

The frames for doors (*dwar*) and windows are fixed in position during the construction of walls; then it is the time to fix shutters. People have devised a very simple but ingenious way to fix the shutters. For a door, the shutter is a thick one-piece plank of about 60 cm width. On one side of this plank, pivots are made at the top and the bottom. These pivots are inserted in the holes made in the horizontal members of the frame, or in the wooden sill and lintel, so that the shutter may turn on these freely. From inside, the door

is closed by inserting a sturdy log of wood in holes made in the side walls, close to the shutter. A handle and a chain are fixed from outside. No window is provided on the ground floor. On the first floor, though the windows are horizontally of large size, but the openings in them are very small and narrow, with most of the openings completely blinded with crudely perforated wooden planks. The perforations in the blinders may admit only dim and defused light and minimal fresh air. The flat surface of these wooden blinders is carved with folk, geometrical, floral, faunal and figurative designs.

By way of finishing, the walls are plastered from both sides. The plastering medium is prepared by mixing pulverised earth and cow dung together. The mixture is then allowed to remain in water for some days to turn into *gara* (mud mortar). When the plaster is dry, whitewashing is done with the locally available *makol*. White washing may be repeated occasionally.

The Jaunsari Housing Pattern

Before discussing the housing pattern of the Jaunsari area, it may be necessary to define the term 'Jaunsari'. The rugged mountainous tract spread over the Sirmaur District in Himachal Pradesh and the Jaunsar-Bawar *paragana* of Dehradun District in the catchment of the Tons River, may generally be defined as Jaunsari not only for the geophysical consideration, but also because this entire area forms an integrated ethnic, socio-cultural and religious entity centred on the cult of Mahasu. Further, there is a distinct similarity in the domestic and religious architecture of this area. Nevertheless, the people of Jaunsari region belong to the same Khasha ethnic stock, to which belong their counterparts in the Giri-par part of Sirmaur District, and are equally steeped in sorcery and totemic practices. Thus, many customs and practices of this region may be common with the Giri-par region. The people of this region have been notorious for pilfering deodar wood sleepers, which the forest contractors have been floating down the Tons, to build their houses. That method of transporting sleepers by floating them in the river is locally known as *ghal*. For this reason, while the same species of wood is found in this area as in the Giri-par area, the houses here are largely wooden, with extensive use of mostly pilfered deodar wood.

For studying the traditional domestic architecture of this area, two typical houses, one of Village Kamrao, and the other of Village Jadi, both in the Tons Basin were selected. Village Kamrao is situated about 40 km from Paonta on the Paonta-Shilai road in the Kamrao sub-tehsil in Sirmaur District on the right side of Tons. Village

Jadi falls in the Jaunsar-Bawar *paragana* of Dehradun District towards the left of Tons in Uttarakhand. This village is located about 13 km from Chakarata on the motorable road to Tyuni and Hanol.

Village Kamrao is spread in three *patti* (hamlets): Chowki, Shlana and Manana. These *patti* are located distinctively apart at three levels. Of these, Chowki or Kamrao proper is possibly the oldest locality. The village, perched on the steep slope of a rugged mountain range facing south, has a strange nostalgic charm about it. The neatly built multi-storeyed houses laid linearly along the contours, with meandering stone-paved lanes and bye-lanes, exude something mysterious and ominous, which is heightened manifold by the totemic reputation of this area. The people of Kamrao are known for their fondness for substantial houses. For instance, the house of Mohar Singh at Manana had forty-two households (Singh 1966 b: 1). A substantial house is locally known as *ghar*, and a modest one, as the *tali*. In Chowki, most of the houses are three storeyed, while in Shlana, these are two or three storeyed and in Manana, almost all houses are double storeyed. Single storeyed houses in Jaunsari area are rare.

To construct a house, the owner first plants four wooden pegs on the four corners of the site selected for the purpose. Then, an auspicious red raw cotton thread (*paranda* or *mauli*) is tied around these pegs to demarcate the extent of the covered area. Within that demarcated site, a *chela* or a Brahman (mostly a Khasha-Brahman) conducts purificatory *pooja*. Thereafter, for eight days, one male member of the family stays guard against any rambling evil spirit. A makeshift shelter may also be made at the site for the guard to sleep. In the meantime, arrangements are made for the collection of materials – wood, stone, slates, and so on. The stones and slates are mostly available around the villages in this area and the people do not have to go very far for these items. They collect these materials through community participation. The owner is obliged to serve the volunteers evening meals together with *sur* (homemade liquor). Mutton is generally cooked and served on such occasions. However, people have been finding it difficult to arrange for wood, for they do not have the customary *bartandari* right to get wood from the specified forests at concessional rates. Perhaps, that may be one of the reasons that drove people to pilfer wood, especially deodar wood, from the *ghal* in the Tons (rarely also from the Giri River), but they never confess to it. However, with stringent control on pilferage, people are gradually opting for ‘modern’ construction materials and techniques.

Customarily, no community participation is solicited for labour required during the construction. The family members usually provide manual labour for that purpose.

Because, the local people are usually not available for that purpose, those who can afford hire labour from outside. The 'immigrant' Nepali and Bihari labourers are now available in plenty for the job. In fact, it is now difficult to get local people for any type of unskilled manual work of construction, horticulture and agriculture in Himachal Pradesh, and that void has been filled by the immigrant labour, mostly Nepalis and Biharis.

To start construction, the foundation is dug to a depth of about 80 cm. The masonry work in the foundation is done with the stones laid in mud or lime mortar, and continued to a height of about 20 cm to 30 cm above the surrounding ground level. The height of the walls for the ground floor or *obara* is raised to about 1.80 m. People use dressed and undressed stone for building purposes, depending upon the owner's financial status. The *obara* may have one or more rooms, depending on the economic condition of the household. If there is more than one room, one of those may be used for tethering cattle and the remaining, for storage, but usually the *obara* is used for tethering the milch cattle only. The flooring of the *obara*, locally known as the *dhain*, is also paved with large flat stones. Depending upon the requirement, the *dhain* may be covered with a coat of mud and cow dung solution. The surfaces of walls are also plastered with the mud and cow dung *gara*. The *obara* has only one entrance door, with no window (*atali*) or ventilator (*chhandwalie*). The entrance door is not only small and narrow (about 120 x 90 cm in size), but it also has an elevated sill so that the filth and water do not enter into the *obara*. Therefore, one has to strain and bow low on one's knees to get into the room. This door also provides access to the stepladder to the upper floor, and one is supposed to take off one's shoes before climbing the stairs. The door is usually a single piece thick wooden plank with one side pivoted, fitted into the doorframe. To close it from inside, a large wooden log (*aghal*) is inserted across it in the holes on the side walls. When this door is shut from inside, the entire house is completely closed to the outsider. Such foolproof security measures were mandatory among the strife-ridden Khasha social setup since Mediaeval times.

In this context, a popular tradition of the area informs us that once, long ago, the people of Kamrao earned the animosity of the Thund, a village community in Jubbal state, over some issue. This turned into protracted skirmishes between them. In order to protect themselves and their houses from the ravaging attacks of the Thund the people of Chowki resolved that each night, one able-bodied person from each household should keep vigil for a possible surprise attack by the enemy. They also decided to bring about modifications in the design of their houses, and to that end, only one

narrow and small entrance was provided for a house. Thus, an intruder, while entering the house, had to strain his body and bend on his knees; this made him vulnerable to attack from the inmates (Singh 1966 b: 7-8). This is only one tradition of inter-clan animosity, but such inter-clan rivalries had been numerous during Mediaeval times among the different Khasha warrior clans, known as the *khoond*. Those feuding *khoond* became known as the *Shattha* (or *Shatthi*) *Khoond* and the *Pattha* (or *Bashi*) *Khoond* (Handa 2004b: 69). Most of those rivalries ended in sanguinary episodes.

No stone is used for the walls on the upper two floors – second storey, called *manjh*, and the third storey, called *baud*. The *manjh* and *baud* are used exclusively as living floors. These are made entirely of wood. The use of iron nails is kept to a bare minimum in woodwork, in the traditional style of construction for fixing the beams (*baih*), planks, and so on. These are generally lap-jointed or dovetailed in a very professional manner. The woodwork in some of the houses in this area is so perfect and well-jointed, especially the internal woodwork, that one is amazed at the degree of skilled workmanship of the traditional local *baddhis*. Although people would prefer deodar wood for the woodwork, they could use other species under compelling conditions. Obviously, the *baddhi* employed on the job has to be a carpenter and a mason rolled into one, which normally is the case. Each of the upper floors has a spacious central room (*chanbara*) and a covered projected veranda (*chob*) or balcony (*tung*). The *chob* or *tung* forms an integral part of the *chanbara*, making it very spacious and an all-purpose living area for the household. Along the side walls of this room, large wooden boxes, locally known as the *kuthar*, are permanently inbuilt for storing grains. Few cupboards may also be provided in the inner wooden walls of the living rooms, where articles of daily use are kept.

In one part, partitioned off from the *chanbara*, the kitchen (*rasoi*) is situated on the *manjh* or the first floor. In some cases, the kitchen may be an entirely independent room adjoining the *chanbara* (the central room). The *chullha* (hearth or cooking range) is built in a corner over a thick and large slate stone platform laid over the earthen cushion. The large and thick slate stones are also placed against the wooden walls (*bhitt*) for protection against fire. No chimney is provided above the *chullha* for smoke to escape. In some cases, the kitchen is made on the second floor. In that case, a small ventilator (*chhandwalie*), with a movable slate shutter, is provided on the roof. The kitchen fire is always kept smouldering and is ready whenever required. In fact, extinguishing fire in the hearth is regarded a bad omen throughout the Himalayan region. Kitchen utensils are also kept very clean. A separate space may be provided for keeping water vessels. None of the houses has a bathroom or a toilet.

With the cantilevered veranda and balconies on the upper floors, the *manjh* and *baud* of the Jaunsari house are far more spacious and larger than the ground floor (*obara*). In the upper storeys, *atali* with sliding panels are normally provided; an *atali* is only an apology for a window, except for a small and stylised aperture, there is no opening in it. Customarily, access to the upper floor is only provided internally from the *obara* through a stepladder (*shir*), which opens into the spacious central room (*chanbara*) on the first floor, and thence to the second floor through the trapdoor, with no access from outside for security reasons. However, lately, people are also opting for external portable ladders.

Ordinarily, no ceiling is provided on the top floor, and the wooden under-structure of the roof is clearly visible. The laying of the roof formally marks the completion of the house. On that occasion, the *baddhi* climbs on the ridge of the roof and sits there to claim the customary obligation for the service rendered by him. He stays put until a satisfactory offer is made to him in cash and kind, besides the settled contractual payment on unit basis, discussed earlier in the context of the Giri-par housing pattern.

For finishing and painting, the exposed woodwork is treated with a coat of ochre solution made by dissolving *geru* (ruddle/ochre) in water. When it is completely dry, mustard oil is rubbed over the coated surface with a piece of cloth. That gives a rich ochre coloured finish to the house. It is believed that the ochre-and-mustard oil coating protects the woodwork from termites and other harmful insects. The wooden floors (*pharkion*) are cleaned and scrubbed daily and kept meticulously clean. Once a week, these are scrubbed with cow urine (*gontar*) which is believed to be a disinfectant. The people of this area are very proud of their houses and maintain them with loving care. The houses built decades ago look new, as if made recently. Credit for such meticulous maintenance of their houses goes to the womenfolk of the area.

It is customary in this area to construct an independent small wooden kiosk, standing high above the surrounding ground on four sturdy legs in an open corner of the fronting *angan*. That kiosk is locally known as the *tand*. The wooden walls of this cabin are made of sturdy wooden battens, placed closely apart to keep the interior adequately ventilated, but protected from vermin. This cabin is made secure with proper roofing and door. The *tand* serves as storage for the maize cobs, which get naturally dried in storage and well-protected from rats and other rodents. The author has seen such storage kiosks in the Uttarkashi District of Uttarakhand also, of which, the one at Village Kharshali, 35 km from Parola, in the Uttarkashi District is interesting.

Located on one side of the open ground, this sizable kiosk is made of sturdy deodar wood planks and logs and covered with a fine slate roof. This kiosk, popularly known as the *bhandar*, belongs to *Mahasu Devta* at Hanol. In this *bhandar*, the annual tribute of the *Mahasu Devta*, known as the *koot*, is stored. People pay *koot* in kind, in the form of coarse millet, mostly *koda* or *mandua*.

Now, the other Jaunsari house at Village Jadi towards the left of Tons is taken up for discussion. Located about 13 km from Chakrata (Figure 2.15) on the motor road to Tyuni and Hanol, this village is a small yet beautiful Khash (*Khashia*) village in the Jaunsar-Bawar area of Dehradun District of Uttarakhand, opposite the contiguous part of Sirmaur District in Himachal Pradesh, on the right of Tons River. The housing pattern of the major eastern part of the Giri-par area in the Tons Basin of Sirmaur



Fig. 2.15: An artist's impression of the rural setting, Chakrata, Dehradun
(Photograph by Author of painting by Dr M. Jain.)

District carried over to this part. The entire socio-cultural and religious fabric of the entire area is also the same. In fact, once this area formed a part of the defunct Sirmaur kingdom, now incorporated into the Sirmaur District. Therefore, the Jaunsari housing pattern, also holds good for the entire housing pattern in the adjoining Shilai area (or the major eastern part of the Giri-par area) of Sirmaur District.

Jadi Village is a typical example of the Jaunsari archetype, distinguished by two or multi-storeyed houses, built in linear form along the contours of the rugged mountain slopes, similar to the ones that are found in the adjoining part of Sirmaur District. The people have planned their houses in a manner that suits their agro-pastoral requirements. The ground floor, which at times abuts the mountain profile on the back, is meant to keep cattle, goats and sheep.

The upper floors have wide verandas facing the valley, with the rooms set on the rear in a linear formation. The rooms are generally inadequately ventilated and dimly lighted. The doors are very small and narrow and so are the narrow horizontal windows (*atali*) covered with wooden blinders to allow only restricted light and air through the stylised slits. However, these serve well to insulate the rooms from the external chill during the winters. A wide and open space, directly connected to the veranda, is left in the middle between the living rooms. This open space (*chanbara*) and the fronting veranda is the busiest part of the house. At times, the veranda is enclosed totally or partly according to the individual need of the household. The open verandas are used for drying and storage of grains, performing domestic chores and the occasional family gatherings. As a matter of tradition, all the exposed wooden structural members, doorframes, shutters, posts, pillars, railing panels, window frames and panels, and so on, are tastefully carved and coloured with red ochre (Figure 2.16).

The houses are invariably provided with gable roofs and covered with locally available coarse shingles. As is the general practice, an adjustable escape gap is left on the roof over the kitchen, exactly where the hearth is located, to drive away the smoke. The ridgepole on the residential houses is plain and simple. It is held sacred and laid on the roof with due ceremony and sacrifice. However, those rites are not as elaborate as for the temple. Although gabled roofs may be common, both to a residential house and a temple, there is a subtle difference in the overall structural arrangement of the two.

While the door must be placed in the centre under the gable for the temple, in a residential house, the door is invariably on the lateral side.

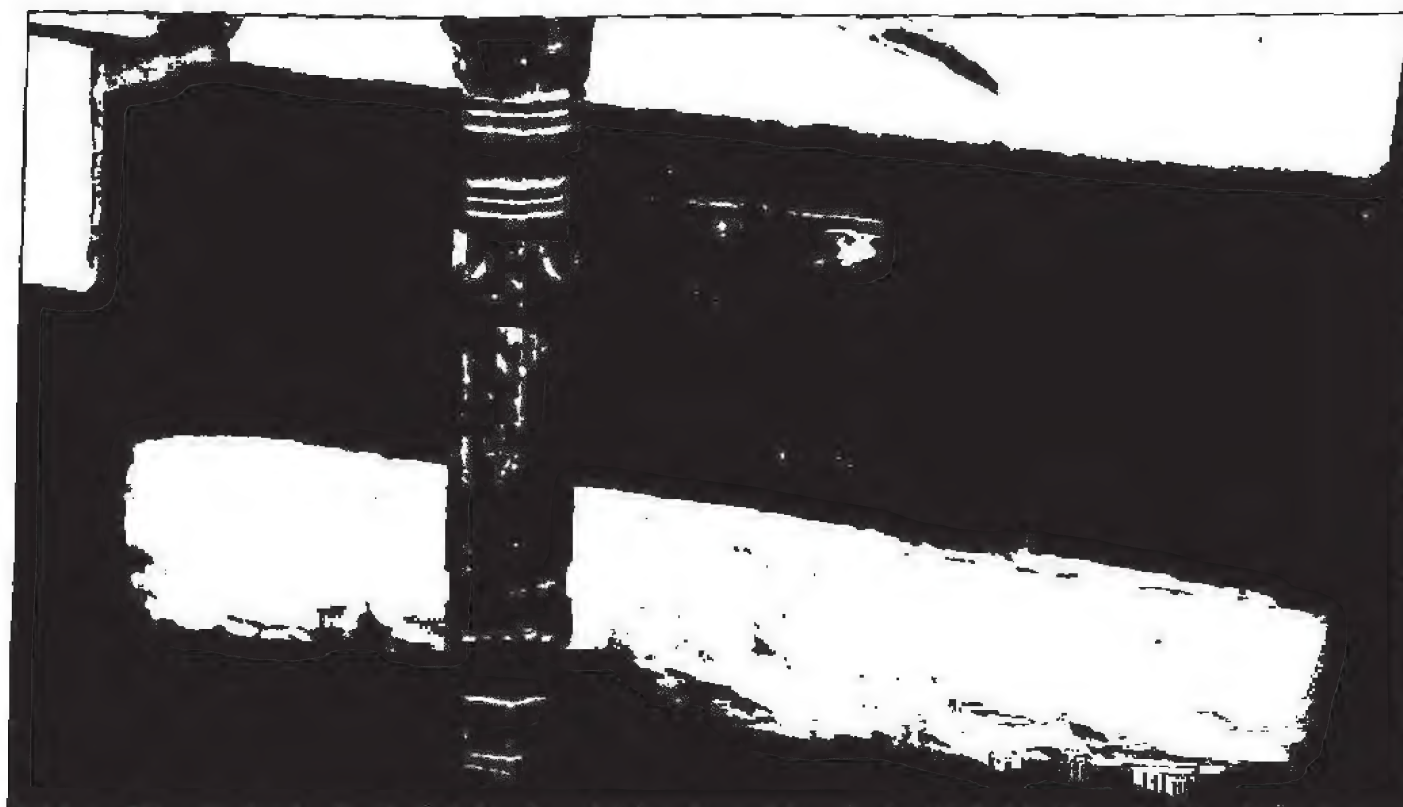


Fig. 2.16: A carved window of a Jaunsari house in Jodi

What makes the Jaunsari house in Uttarakhand look different from its counterpart in Himachal is the variation in the construction of the wall. While the houses at Kamrao in Himachal Pradesh, generally have stone masonry walls for the ground floor only and the wooden panelled walls for the upper floors, the houses at Village Jodi in Uttarakhand have stone masonry load-bearing walls for the entire structure, similar to the ones that are found in the Giri-par houses at Village Rajana, noted earlier. What is common in the Jaunsari houses (Figure 2.17) on both sides of the river Tons is the fact that the indispensable front threshing yard is generally, conspicuously missing in these houses. That may indicate that the cultivation of cereal crops, which need threshing to remove chaff from the grains, has remained marginalised in this rugged area, and the people have been cultivating such crops for which a regular threshing yard is unnecessary.

The Housing Pattern in Kyarda Doon

Kyarda Village is located in the area traditionally known as Kyarda Doon (now called Paonta Doon). It is now a small roadside village on the Paonta-Nahan road. The house



Fig. 2.17: A typical Village house at Village Jodi

type in the Jaswan Doon is similar to the one in the section entitled *Lowland House in the Temperate Setting* that has been discussed, and what is found in the Doon of Solan District does not differ much from what has been discussed in the section entitled *Housing Pattern in the Doon Highlands*. However, here the residential housing pattern in the Kyarda (or Paonta) Doon, has an entirely different ethno-cultural and geo-climatic context and different biophysical conditions prevail.

The Kyarda Doon is generally characterised by subtropical climatic conditions, with very hot summers and mild winters. The floor of Kyarda Doon is a vast undulating tableland, with stretches of flat land spread on the banks of both the rivers Markanda and Bata. Both these rivers, though seasonal, keep flowing even in an emaciated state during extreme summer conditions, but virtually inundate the entire doon during the monsoons. Both these rivers originate from somewhere in the middle of the Dharti Range, but diverge in diametrically opposite directions: while Markanda River flows

south-westwards, the Bata River continues to flow towards the southeast and pours into the Yamuna at Bata Mandi near Paonta. The villages, interspersed by the thick and grassy jungles of various species, are situated here on the higher and undulating or mildly inclining terraces of the conglomerate alluvium, not suitable for agriculture. Most of the major villages of the area are well-connected with urban centres on all sides by several all-weather roads, criss-crossing through various villages, but the two highways – Nahan-Paonta-Dehradun road and Nahan-Kala Amb-Ambala road are the most important ones. Besides, all the villages in the area are interlinked with cart roads, and most of the villagers have their own bullock carts.

The present inhabitants of Kyarda Doon are not native to the area. Possibly, this area and the vast Siwalik foothill tract remained dominated by the ancient Kulind or their later descendants, the Kunet. Structural evidence of the old settlements is plentifully available, embedded among the thick bushes and massive trees in the jungles almost everywhere in this area, to indicate habitation and activity in the past. The author had a chance to explore this area extensively and found habitational evidence deep in the forests not only at Sirmauri, Tal and Nagnaun, but also at Mirpur Kotala, Amboya, Parduni, Bias, and other places. What were the circumstances that compelled the earlier inhabitants to migrate are difficult to know.

Devoid of human involvement and activity, the Kyarda Doon turned into a vast stretch of thick and wild jungle, abounding in all sorts of wild animals, including panthers, tigers, elephants and game animals. There are thick forests even today, but panthers and tigers are rare now and elephants are extinct. The other communities are evenly distributed in the entire doon.

For a study of the traditional housing pattern in the Kyarda Doon, the author selected two typical houses, one belonging to the Labana community and the other, to the Koli community. The houses of other communities are not different from the ones of these two communities. Since the Labana settled in the Kyarda Doon from the adjoining tropical plains of Punjab, they also brought with them their traditions, manners, belief-systems and housing style. All those traits are clearly reflected in their lifestyle and dwellings, in which grass and jungle wood have a pre-eminent role.

Under these abovementioned broad parameters, economic and functional considerations have also greatly influenced the form and style of the traditional housing pattern. The choice of material for constructing walls and roofs depends upon the

economic status of the owner. Besides, the purpose for which the house is to be built is also a major deciding factor. Since it is no problem to find land to construct a house, the traditional houses in the Kyarda Doon are essentially single storeyed structures located widely apart from each other, mostly in irregular linear formations on such higher terraces not suitable for agriculture. These houses spread out horizontally rather than vertically, and almost every house has a well-maintained, spacious fronting courtyard and sufficient open space around, not only to grow flowers and vegetables, but also to have a variety of fruit bearing trees like banana, papaya, guava, mango and varieties of citrus. Those houses may broadly be classified into three types:

- (1) Mud-built thatched dwelling,
- (2) Masonry structure with thatched roofing, and
- (3) Masonry structure with CGI sheet roofing.

Mud-built Thatched Dwelling

The mud-built thatched dwellings are traditionally associated with the Labana. As a majority of them inhabit the main doon to live in isolated single large rooms (*kotha*), the four walls are made of mud and covered with thatched roofs (*chhappar*). These huts are mostly made of locally available material, boulders, earth, jungle wood, bamboo, twigs, grass, and so on, almost entirely without using iron nails and other fixtures. No skilled artisan or external labour is required to build such dwellings, but the family members, men and women work together to make their home cosy and comfortable, born organically out of the soil.

To make such a hut, an elevated plain piece of land is selected. The work of excavating the foundation is normally started without any formal ritual. The foundation (*neev*) is not dug beyond a depth of 45 cm to 60 cm. It is then packed with boulders up to the ground level. Over it, a plinth course of random stone masonry is laid in mud mortar. There are two options for fabricating the superstructure of a *kotha*.

The simplest way to start the *kotha* superstructure is to erect four sturdy jungle wooden logs of equal height, with the forked tops on the plinth, one at each of the four corners. Two similar but taller logs are planted in the middle of each lateral plinth. A ridgepole is spanned on the taller logs, and similar horizontal logs are secured to the forked ends of the verticals planted on the corners. On that contraption, wooden or bamboo rafters are spanned. Thus, the infrastructure for the thatched *kotha* is complete.

What remains to be done is to place the prefabricated thatched roof (Figure 2.18) on the rafters and provide four walls, made of thatch properly stuffed into the bamboo frames. The other option is to embed the four corner logs in the four earthen walls.

However, further improvement over the completely thatched *kotha* is the one made of four earthen walls and covered with prefabricated or built in situ thatched roof. For such *kotha*, over that plinth course, 45 cm to 60 cm thick earthen walls are raised to make an all-purpose large rectangular room of about 8.50 x 3.50 m floor area. To make the earthen walls, locally available clay is first sieved with the *chbanni*. An appropriate quantity of rice husk, chopped rice chaff or grass is added to it as a binding medium. The mixture is then well pulverised and thoroughly kneaded to form a pliable mass of mud of the desired consistency.

After the mud is ready, two sturdy wooden planks are positioned horizontally on the plinth course, spaced apart to define the width of the proposed wall. The space between them is filled with mud. To make the filling compact, it is thoroughly rammed with *mungaree* (large wooden mallet). At times, small pebbles are also embedded in the fill. The process is repeated by horizontally shifting the wooden planks from one place to the other. This



Fig. 2.18: A thatched roof dwelling in the Kyarda Doon

way, one course of the filling is complete. In this manner, course over course is piled up until the longer walls reach the desired height, which is normally about 2 m.

The shorter side walls are raised further to a height of about 1 m to 2 m to form the gable. Such earthen walls are known as *matkanda*. At times, to make the gable, only the earthen pillars are raised in the middle of the side walls to support the ridgepole, while the remaining part of the side walls is kept at the same level as the longer walls.

While the process of making *matkanda* walls is in progress, a gap for the main door (*keewad*), which opens into the fronting spacious courtyard, is left normally in the middle of the long wall. The door is never provided under the gable for residential houses. This door is the only opening in the hut, but there is hardly any problem of air and light in the hut, for the gaps under the gable, between the four walls and the roof, and the thatched roof take care of that rather effectively, and diffused light and air is amply available inside. Therefore, the interior of such a hut remains very airy and reasonably lighted (Figures 2.19 and 2.20).

When the *matkanda* walls are ready, a round wooden log is placed on the apex (*magri*) of the side wall or the earthen pillars to serve as a ridgepole (*balla* or *ballee*). To

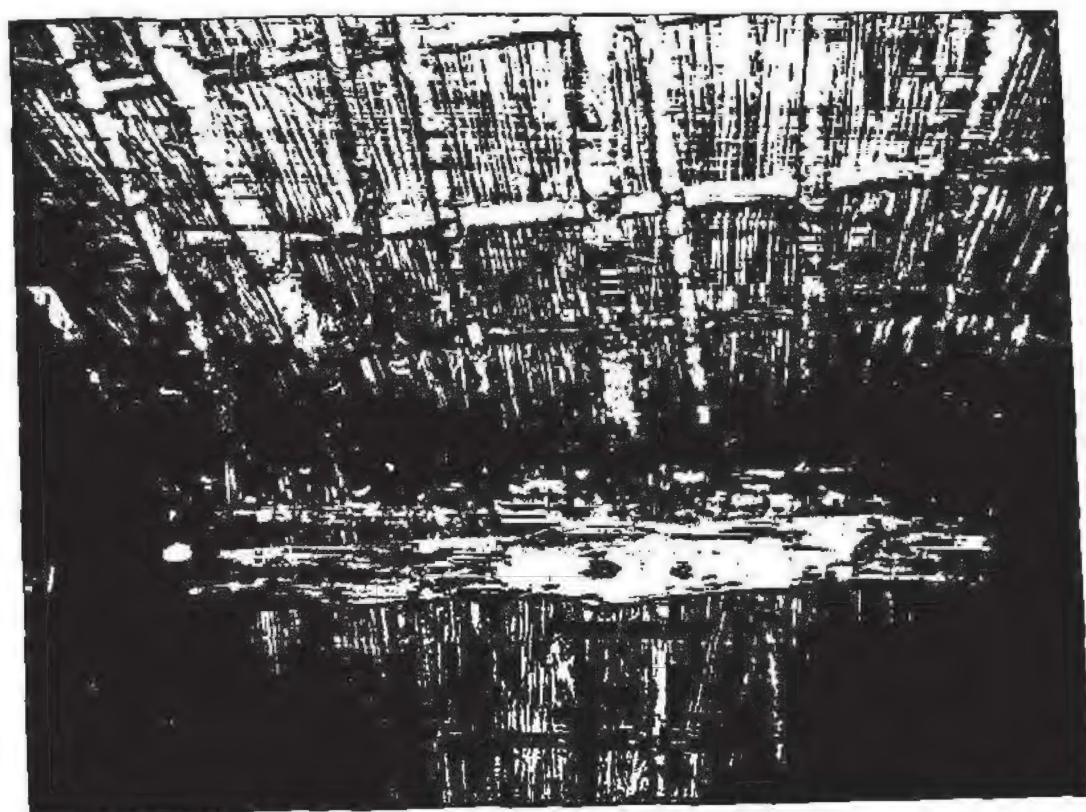


Fig. 2.19: The underside of a thatched roof



Fig. 2.20: Detailed view of the supporting logs of a thatched roof

secure the ridgepole atop the gable, it is fixed to the base with a wooden contraption, called *korve* or *kanta*. In case, there is fear of the *balla* sagging due to a longer span, it is propped up by wooden supports (*thambi* or *tham*) erected in the mid-span. Rafters (*balla* or *ballee*) are then spanned, with their top ends resting on the ridgepole and the lower ends resting over the longer walls. Care is taken to extend the rafters by about half a metre beyond the outer face of the wall to make a projected gable-end (*lotiya*).

Mostly logs of *sandan* or *sal* are used for this purpose, but use of bamboo is also seen in several houses. To fix the rafters firmly, these are tightly secured with the ridgepole by sturdy *maljan* (*Bauhinia vahlia* Wight and Arnott) vines. Over these rafters, thin wooden scantlings or split bamboo battens are firmly tied with the *maljan* vines to form a sort of framework (*badondh*). Once the framework is complete, the actual roofing process is started. Normally this work is done by family members themselves, but the people skilled in laying thatched roofs are also available.

These varieties of grass are amply available in the area. The base layer (*neeran*) which is about 3 cm thick, is systematically spread, starting from the gable end to the ridge (*modian*). Over that base layer, 15 cm thick layer of grass is spread in a similar manner. Sometimes, a framework of thin bamboo strips is also provided over the grass to make the roofing a compact single mass. Once the laying of grass (and optional bamboo framework) is complete, the layers are carefully tied with ropes to the wooden or bamboo under-structure so that the roof becomes a tightly secured compact mass, lest it is blown away with the wind. The ropes used for tying the roof are also locally made of *bhabbar* or *baga* grass. Such rope is known as *ban*. Thin and stronger ropes are also made from the fibre of mulberry (*Morus alba* L.) for tying thatched roofs and for various other purposes. The thin flexible twigs of mulberry are also used for preparing *tokari* (baskets) and *chhaba* (flat baskets) for carrying building material.

The single door (*keewad*) of the hut is made of locally available wood. The doorframe (*chokhat*) may be with or without a sill (*sardal*), but the entrance is always kept higher than the floor level of the room. A single-leaf pivoted shutter is provided, with a horizontal log (*ballee*) attached to it from inside to close it. The external locking arrangement is the only metallic fixture in the entire structure.

After the hut is complete from outside, internal work is taken up. The floor of the hut, which is about 15 cm to 30 cm above the surrounding ground level, is made of locally available small stones, pebbles and grit, made compact with the *mungaree*. Over that soling, a thick layer of moist earth is laid, made compact by vigorous ramming. The surface is then finished with a cow dung solution, and the walls are finished after mud plastering. Whitewashing or colour washing may be done with locally available coloured clays, and repeated occasionally.

The *kotba* is the multipurpose living room, where, in one corner, an earthen *chullha* is made for cooking meals. At this time, the kitchen (*rasoi*) area is set apart from the living area within the *kotba*. For that purpose, a *jalee* (screen) is appropriately fixed as a curtain or partition wall. This *jalee* is made of stalks (Figure 2.21) of *sarkanda*, *kabi*, *kan* or *kans* (*Saccharum spontaneum* L.) or bamboo strips tied into a framework.

In the kitchen area, a stand for keeping water pitchers (*gharonchee*) is also provided and niches (*ado*) are made at appropriate places in the wall. Sometimes, a large earthen container (*kothi*) for storing grain (Figure 2.22) is made as a divider between the kitchen and the living area. Bamboo strips are used in making thin walls for such containers.

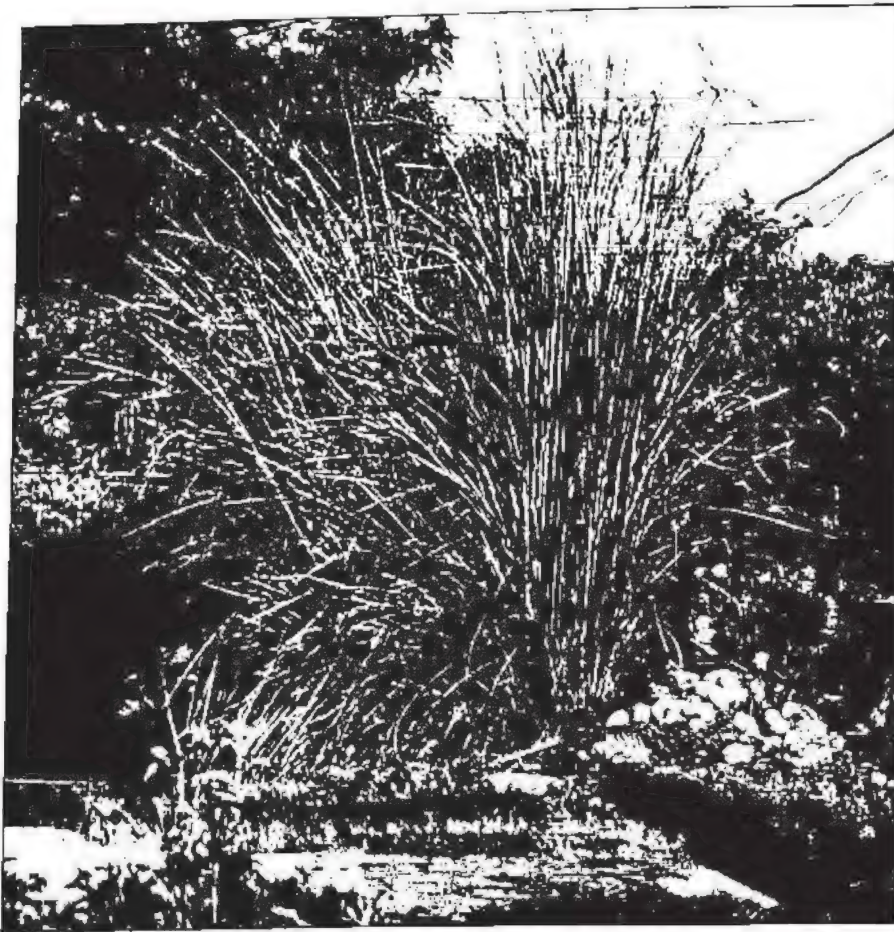


Fig. 2.21: The Sarkanda (common spear grass) that grows wild in the Kyarda Doon

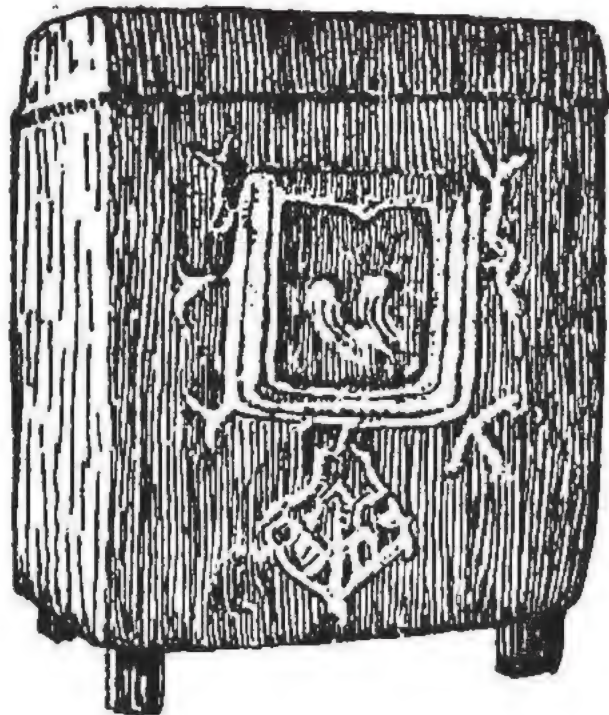


Fig. 2.22: An earthen container (Kothi) for storing grains

Or the split stalks of *kahi*, *kan* or *kans* are tied together to form a container framework. That armature is erected in position to serve as reinforcement. Lumps of stiff *gara* are then filled in the gaps of that armature. When the filling is semidry, the framework is tightly plastered on both sides with thick coatings of *gara*, and finished with the clay-cow dung solution. Thus, the 'reinforced' mud wall is complete. Such a wall can be made of any thickness to serve various purposes: it can be used as a thin partition wall, or in a staggered form to make cupboards, containers and silos (Figure 2.22).

Masonry Structure with Thatched Roofing

The houses made of stone or brick masonry walls are not a one-room affair, as in case of the aforementioned *kotha*, built of *matkanda* and *chhappar*. These are multi-room single storeyed houses, which have assimilated the broad layout features of the houses in the Doon highlands and the roofing style of the *kotha* of the Labana. Traditionally, most of these houses are owned by the Koli, who inhabit the wild and undulating area along the Markanda River. Despite the rough topography of the area, the houses of the Koli are widely spaced apart in a linear formation. However, the well-kept courtyards and cultivated surroundings, so common around the thatched huts of the Labana, are conspicuous by their absence here despite ample open space around the houses. However, a few papaya and banana plants may be found here and there.

A typical Koli house (Figure 2.23) essentially comprises a large rectangular room with an enclosed veranda in front, but such a dwelling unit has ample scope for lateral expansion on both sides. Thus, a small room with a fronting veranda may be added to the existing structure on one side, and if needed, a veranda may be extended to the other side to make an independent kitchen. In any case, the veranda is always enclosed, looking like an elongated room with entrance door and windows or

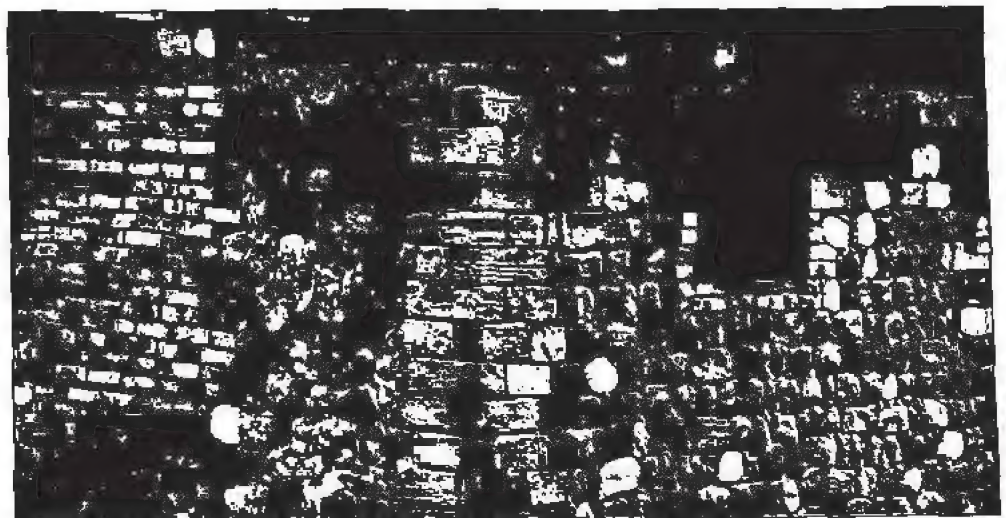


Fig. 2.23: A brick and stone conglomerate wall of a Koli house

honeycombed pigeonholes. Each room has an independent door from the accessible veranda. Normally no window is provided on the sides, for the house may need lateral expansion subsequently, but there are windows in the back wall and front wall of the room. The front windows open into the enclosed veranda, and, thus, these hardly serve the intended purpose. Although the people do not care much about orienting the main entrance of the house, yet they consider a south facing entrance inauspicious.

Unlike the institution of voluntary community participation for constructing a house, as has been noted in the Himalayan interiors, or a house built by the family members themselves, as in the case of the Labana, the people desirous of building a house here normally hire skilled and unskilled labour. The masons undertake masonry work and the carpenters do the woodwork, and they are paid in cash on pre-settled terms. They sometimes assist the owner in designing his house. The two-in-one traditional complementary institution of the hereditary *baddhi* is unknown in this area.

Unlike the Labana, the Koli observe necessary religious rituals before starting construction of a house. The village Brahman is consulted to find out an auspicious day. Usually people regard *Navaratra* as the most opportune time to start house construction. On the *mahurat* day, *gur* or *shakar* is distributed before digging the foundation. The foundation is dug to a depth of about 60 cm to 90 cm, depending upon the underlying strata. It is then hand-packed with rubble and grit, available locally from the conglomerate strata. This process is continued till the ground level is reached, and above that, random rubble stone masonry is laid in orderly courses. The plinth height is normally kept between 30 cm to 60 cm. After the erection of doorframes (*chokhat*), which are normally made of *sal* wood, the masonry work in the superstructure is continued. For this, stone is usually laid in mud mortar. The locally available stiff clay is most suited for that purpose. When the masonry work is complete, the joints are properly raked and cleaned, after which the joints are pointed with lime (*surkhi*), but lately cement has replaced the traditional lime for pointing. While the masonry work is in progress, the window frames are also positioned at proper places. The other stages of construction are generally the same as those noted in the context of the section entitled *Housing Pattern in the Doon Highlands*. However, the thatched roof of the Koli house is laid in a different manner, which is described in detail in the following paragraphs.

After the front and back walls are raised to the roof level, and the side and intermediate walls built to form the high-pitched gables, the under-structure for laying

the roof is placed in position. This process is quite similar to the one described in the context of the Labana house a short while earlier. Wood for that work is locally arranged from the surrounding forests at customary concessional rates, popularly known as the *zamindari* rates. People are not very particular about the variety of wood: they use any type of wood for the roofing under-structure, for they know that while the stone walls may last for many decades, the thatched roofing has to be occasionally laid afresh, normally after every four to five years.

A certain amount of skill is required in laying the thatched roof (*chhappar*) though it may look easy and simple. The people use *khad* (*Heteropogon contortus* Beame), grass for roofing. This grass is also known by many other names at various places, namely, the *sargra khar*, *khar* or *lamb*. The *khad* grass, bamboo and *maljan* vines, the basic constituents of the *chhappar* are abundantly available along the Markanda River. The *khad* grass is harvested from the jungles during the winter months of December and January, when it is dry. The womenfolk, and sometimes even men, perform this job. They tie the grass into bundles (*pulla*). The *maljan* vines are also collected from the forests. These vines are kept underwater for at least a week to make them tender for twisting and manipulating to form knots. Bamboo poles are also split into strips of various sizes. First, a frame of unsplit bamboo is made. To that frame, bamboo strips are fixed diagonally or crosswise to form a sort of lattice. All the joints are tied securely with the tender *maljan* vines. Thus, the required numbers of bamboo frames are fabricated. This whole work is done on the ground. The frames are then placed on the roofing under-structure and tied securely to it. Once the bamboo frame is fixed on the roof, the thatching operation begins. The *khad* grass is evenly spread on it in two layers from the gable end to the ridge. Four to six persons are engaged for the thatching work. The first layer is about 3 cm to 4 cm thick, and the second and top layer is kept 15 cm to 20 cm thick. After each layer, the grass is thoroughly pressed with long thin bamboo strips and tied with homemade ropes. Sometimes, not only the fabrication of the bamboo frame, but also the thatching work is done on the ground, and the complete *chhappar* is bodily lifted and tied to the under-structure of the roof. The entire thatching operation is completed in a few days, depending upon the covered area needed for the building. Normally, the thatching needs replacement after about four to five years; the bamboo frame may serve for about twenty years.

Except for one serious disadvantage – the grass is highly inflammable – there are many advantages of this type of roofing. The most significant advantage of thatched

roofing is that it is the most economical and time-saving type of roofing, which the family members can lay by themselves, in a couple of days without any external help. For it, no costly timber that may involve felling of trees is required, but fallen and dry jungle wood, twigs and dried grass and bamboo are the only materials needed. Obviously, such roofing imposes no pressure on the forest, and is, thus, environment-friendly. Grass is a bad conductor of heat, thus the thatched interior remains well insulated and comfortable even in the severe conditions of the Kyarda Doon. The old grass and other material can be recycled for other purposes. For instance, the old grass can be turned into compost.

During summer and the rainy seasons, when the little sparrows make their nests in the *chhappar* and lay eggs, people usually stuff the *chhappar* with cow dung. It is done to keep off the snakes which prey on the eggs and chicks. The odour of cow dung acts as a repellent for snakes. That may also explain why cow dung is so liberally used to smear walls, floors and courtyards of houses. The village folk generally use cow dung (*gobar*) and cow urine (*gontar*) to keep floors and walls religiously clean and make their homes auspicious, but, in fact, using these not only makes the environment hygienic, but the odour from these also acts as a repellent for a variety of reptiles and insects. Thus, the use of *gobar* and *gontar* is not only psychologically conducive and physically beneficial as well. That effect is increased manifold when the womenfolk create artistic and floral patterns with *gobar* on the floor by the subtle manipulation of their nimble fingers, which not only brings forth the aesthetic aspects of the simple rural womenfolk, but also lifts their spirit.

Masonry Structure with Corrugated Galvanised Iron Sheet Roofing

The method of laying the foundation and erection of walls for the superstructure, floor, and so on, in case of houses with masonry structures and CGI sheet roofing is the same as noted for the section entitled *Masonry Structure with Thatched Roofing*. However, the roofing is replaced by the CGI. This change is significant, for, it signifies a departure from the customary practice of dependence on local material for constructing a house, and reliance on the import of factory-made construction material. In the CGI sheet covered houses, not only is the roofing material imported, but all sorts of ironmongery is procured from the towns, and skilled workers for using those materials also have to be engaged from outside. Not only does it reflect the economic position of the owner, but also indicates his higher social status. Naturally, such houses are well-planned, with

an independent kitchen and there may be a separate bath, not attached to the main building, but slightly away from it.

In the houses covered with CGI sheets, there are two types of roofing: (1) low-pitched lean-to, and (2) gable roofing only. In case of lean-to roofing, the back wall is raised and the front one, kept low, to form a uniform slope. After the woodwork for roofing is complete, CGI sheets are clamped to the purlins. The roofing is projected about 15 cm from the walls so that the water may not seep inside. Over the roofing, a 20 cm to 30 cm high parapet is built on all sides, with outlets for rainwater at appropriate places. These parapets keep the sheets well-pressed and secure even in stormy conditions. People also use the low-pitched lean-to roof for stacking fuel wood for drying; such parapets also protect the wood from sliding down.

The pitch of the gabled CGI sheet roofing is normally kept higher than that of the lean-to roofing, but not as high as is found for slate roofing in the interiors. Possibly, psychological factors may be responsible for this feature. In the mountainous topography of the interior region, full of towering peaks and ranges, the pitch of the roof is also kept high to harmonise with the mountainous landscape; the lean-to and low-pitched roofs blend better with the mildly undulating and the gently sloping topography of the doon.

In the case of the gabled roof, the side walls are raised to form a gable. The rafters are also placed accordingly: the higher ends are jointed to the ridgepole and the lower ones embedded at the top of the front and back walls. However, care is taken to project the rafters beyond the outer edges. On that under-structure, CGI sheets are properly clamped. In case of gabled roofing, parapets are provided only on the gabled sides and not over the roof ends over the front and back wall.

The Gujjar Housing Pattern

The Gujjar have been among the greatest nomads known to history. Having remained on the move for centuries, now most of them are leading a settled life, but sticking to their ancestral cattle-herding vocation. They are widely distributed in various pockets in Jammu and Kashmir, Himachal Pradesh and Uttarakhand. In Jammu and Kashmir, the Gujjar who have remained traditionally engaged in shepherding are known as *Bakarwal*. However, a majority of them have been buffalo-herders. In the interiors of this region, the Gujjar have two distinct divisions, the Muslim Gujjar and the Hindu Gujjar. The Muslim Gujjar are largely concentrated in parts of Jammu and Kashmir and the adjoining Chamba

District of Himachal Pradesh, but the Hindu Gujjar have their settlements at several places from Jammu-Kangra to Sirmaur in the Siwalik foothills and the *tarai* belt of Uttarakhand. A sprinkling of Gujjar, both Hindu and Muslim, is also found in the interiors of Kullu, Mandi and Shimla districts, where their houses – *myhara* and *kotha* – are uniformly similar under the prevailing higher altitudinal temperate geo-climatic conditions.

Gujjar are essentially robust people, known for their valorous character and strong physique. The Hindu Gujjar, popularly known as the *Mebar* in the Siwalik foothills, are great wrestlers, their wrestling bouts are known as *doodh-kadoo* in Mandi District. They are also very avid *tamak* (a local game) players. Interestingly, on such occasions, the distinction between Hindus and Muslims becomes irrelevant, and both participate and enjoy such occasions with unbridled gusto.

The Muslim Gujjars belong to the Sunni sect of Islam that forbids all sorts of ostentation. Under its diktat, they do not prefer art-activities and visual decorations of any kind, which has made them temperamentally practical, and altogether down-to-earth people. These traits are subtly reflected in their rustic dwellings, known as *kotha* or *myhard*, wherein the Muslim Gujjars live together with their families and cattle under the same roof.

On the other hand, the religious affiliation of the Hindu Gujjar is ambivalent and confused. Nevertheless, they have something to do with the cult of Krishna, and a *Maihari* – a Hindu Gujjar maiden – has a pivotal role to play on various occasions related to that cult. They also believe in the minor local cults associated with *pirs* and saints. All these factors are significantly reflected in their dwellings. It is generally a humble single storeyed hut, but it evokes interest for its subtle decorative features, ingenuity and well-kept surroundings. A Gujjar house, be it of a Muslim or Hindu Gujjar, is essentially earthbound and intimately related to the surroundings. Here, two typical examples will be discussed, one of Muslim Gujjar houses in the remote Village Maingal of Chamba, bordering with Jammu and Kashmir, and the other of Hindu Gujjars in Village Mirpur Kotala (Sirmaur District).

A Muslim Gujjar House

Maingal is a remote village in the interiors of Chamba at an altitude of about 2290 m above sea level. The soil in this rugged mountainous setting is composed of conglomerate schist deposits with the clayey overburden of varying depths. Due to overgrazing and removal of leaves for fodder, the green cover in this area is almost missing and

the surroundings have a bald look. The winter with heavy snowfall is generally harsh and long in the area, considerably hindering outdoor activities. However, during the brief summer months from May to June, the climate remains bright and bracing with intermittent rains from July to September, when the entire mountainscape is shrouded in mist and humidity.

Maingal is predominantly inhabited by the Muslim Gujjar, who belong to the orthodox Sunni sect. They are generally averse to any change in their traditional belief-system and living habits. Consequently, they lag far behind their non-Gujjar counterparts economically and in formal education. That trait is unmistakably reflected in their rustic houses, in which men and buffaloes live under one roof. Like any other Gujjar Village in this terrain and the adjoining districts of Jammu and Kashmir, Maingal is a disorderly village, which conforms neither to the linear nor clustered arrangement. The widely spaced dwelling units are located on the edges of narrow and unyielding terraced fields, and linked by narrow zigzag paths. Only a few dwelling units might be found grouped at one place. Thus, Maingal Village has virtually as many *patti* (hamlet) as there are dwelling units. In front of every house, there is a small courtyard with a few wild apricot or peach trees on the edges. This courtyard is generally used for spreading grains for drying; cattle may also be tethered here in fair-weather conditions.

A Gujjar house is a single storeyed rectangular structure, with a flat mud roof and built on sloping ground. The Gujjar do not even bother to level the site to construct their *kotba*: that is how a Gujjar dwelling is known in the interiors of Jammu and Chamba. Elsewhere, in the interiors of the Mandi and Kullu region, Gujjar dwellings are known as the *myhara*. However, there is no structural or functional difference between them. The *kotba* is a large quadrangular multipurpose room, partitioned by intermediate walls to form two interconnected functional areas: the larger one is reserved for the household, and the adjoining smaller one for the buffaloes. The only access to the interior is through the door in the living area. The buffaloes also enter the byre through that door. In some *kotba*, separate doors to the living area and the byre are provided from outside, but in such cases, doors internally connecting the two areas are necessarily provided.

The floor of a part of the living area is slightly raised on one side which serves as the cooking place. Sometimes, a small and thin partition wall is provided to separate the cooking and living areas. The interior of a *kotba* is characteristically dark and dingy, with no window or ventilator to admit light or fresh air. The constantly burning fire further makes the room stuffy and smoke-filled. The mosquitoes, flies and odour of

dung coming from the byre makes the interior quite smelly, but the Gujjar are so accustomed to this kind of living. In fact, Gujjar never take the construction and maintenance of their *kothas* seriously, but devote their entire energy and attention to the upkeep of their buffaloes.

The Gujjar's *kotha* is essentially an improvised structure, organically planted in the soil, for nothing is brought from outside to construct it. All that is available in the close vicinity is used. The local jungle wood, local schist stone and clay are all that are required to construct a *kotha*. The Gujjar never engage unskilled or skilled labour from outside the community, but all the villagers contribute labour to collect material and construct a *kotha* under the customary institution of reciprocal community participation, locally known as the *saref*. To effect economy at every point, the Gujjar do not even bother to saw the wood, make doors or have any other type of woodwork that may require skilled hands, but the entire job is done by the owner or his kith and kin. Obviously, there is hardly any scope for introducing an element of ornamentation in the *kotha*, and it essentially remains an artless and drab structure. Surprisingly, the Gujjar do not even whitewash or colourwash their *kotha*, but to make them look more earthbound and modest, smear even the doors and the interiors with mud solution. More than the semi-nomadic lifestyle of the Gujjar, the austerity, that marks the Sunni religion, is visible in the plainness of their dwellings and is perhaps responsible for the drabness that has affected their way of life.

When enough material is collected, construction work is taken up through reciprocal community participation. Sunday, Monday, Thursday and Friday are considered auspicious days for this purpose, but the day to begin work is decided by the mullah. The work of digging the foundation (*neeh*) is taken up straightaway on the sloping ground, without bothering to level the site. It is dug about a metre deep and filled with unhewn stones up to the ground level. On it, the walls of the superstructure are built. The thickness of the dry schist stone masonry walls varies between 60 cm to 75 cm. Although this stone is unsuitable for structural purposes, the Gujjar are generally oblivious to such considerations. The walls are raised to roof height without using wooden binder or wall plate. However, in quite a few dwellings, rough wooden wall plates can be noticed, casually inserted into the masonry. After the four walls are raised to a height of about 30 cm, doorframes are suitably placed. This is to ensure that the doorsill remains reasonably higher than the ground outside. The Gujjar are least fastidious about the orientation of their dwellings or their entrances, but the south-

facing entrance is preferred. Generally, no shutter is provided for the internal doors, and at times an improvised shutter or screen serves that purpose. However, the main door that opens into the living area has a shutter. This shutter is also a rough and thick wooden plank, having no hinge or pivot for opening or closing it. It is so placed in the slot of the frame that it can be conveniently lifted and removed or placed in position as and when required. In order to keep it securely closed during the night, a wooden log, that keeps the shutter tightly stuck to the doorframe, is inserted into the cavities of the side walls. Sometimes, even a contraption is dispensed with and a heavy log is placed diagonally against the shutter to keep it fixed in a position.

The walls are raised normally to a height of about 2.50 m, when the structure is ready for laying the roof. During that process, small niches are also provided in the walls. Since the site remains undeveloped and unlevelled, the back wall of the *kotha* is built across the slope, abutting the hill cutting. Thus, the back portion of the *kotha* usually remains damp during the wet months.

For laying the roof, long wooden logs are placed one foot apart over the walls and are known as *bandey*. Over the *bandey*, small and rough wooden planks (*sheelay*) are placed. After laying *sheelay*, the surface is covered with a layer of local *kakhet* grass or *bhojpata* (birch bark sheets), if available. A 20 cm thick layer of earth is spread all over and is compacted by vigorous ramming. An edging of stones is then provided all around the roof so that the earthen top of the roofing is not eroded during the rains. Nevertheless, an earthen layer is sporadically provided over the roof to make good any possible loss. The roof is extended beyond the walls on three sides by about 1.5 m to 2.00 m, while at the back it merges with the hill profile as its organic part. Under that roof projection, agricultural implements and fodder are kept. To ensure that the roof does not sag under its dead weight, sturdy wooden pillars are provided at proper places in the rooms.

After the structure is complete and duly roofed, it is plastered with a special type of sticky local clay, known as *gunret*. This brown clay is reasonably water-resistant. When it is dry, a flowing coat of *gunret* is applied all over again. Even the doors and other wooden parts of the structure are coated with *gunret* solution. Mud coating of walls and interiors is occasionally repeated. The floor inside the living area is given a thick coating of mud, and that process is frequently repeated. The byre area is paved with stones. No decoration of any kind is seen in the *kotha*. However, sometimes the author has seen crude drawings of guns and leafless trees on the exterior walls in a few *kotha*.

Probably, these have less do with decoration per se and were subtle expressions of their virile character, which is so well-reflected in their marriage customs that involve shooting of *taman* and lifting of heavy *mugdar* by the bridegroom's entourage before it is ushered into the bride's house for *nikah*.

A housewarming ceremony is held before occupying the new house. On that occasion relatives, friends and villagers are treated to a feast by the host. This ceremony is known as the *nayaz*.

A Hindu Gujjar House

The Hindu Gujjar are scattered in small pockets in the Siwalik foothills of the western Himalayan region and the *tarai* belt of the central Himalayan region in Uttarakhand, where subtropical climatic conditions prevail. In those areas, most Gujjar have their houses away from the regular habitational areas, in or near the forests, where ample pasturage is available for their cattle, especially buffaloes. Their widely separated mud-built and immaculately kept dwellings amidst thick and wild foliage subtly remind one of the classical hermitages of the Vedic sages. Hindu Gujjar are colourful, romantic and ingenious people, who strive to make their mud huts not only functionally perfect, but artistic as well. Their womenfolk take keen interest in ensuring that nothing looks drab around their homesteads.

For the study of a Hindu Gujjar house, the author selected a typical Gujjar house in Village Mirpur Kotala of Sirmaur District on the border of Naraingarh in Haryana. This village, though situated in the sub-hill tract, is one such remote and secluded corner in the region, where people are still living in the age of bullock carts. The houses in the village are situated widely apart, made invisible by thick semitropical foliage. The revenue nomenclature of this locality notwithstanding, there is hardly any thing that justifies calling it a village. Each Gujjar household is living in its microclimatic ambience, unrelated to its counterparts in the distant neighbourhood.

The old folks of Mirpur Kotala told the author an interesting story about the legendary past of this village, when he first visited this village in November 1988, after having picked up a clue about the ruins at this village. The villagers relate the existing local mound to an ancient fort (*kotala*), named *Krori Nagar*. Exploration of the area also revealed definite evidence of structural activity here in the distant past. Not only have the overburden and thick bushes over the mound camouflaged the stone and brick masonry walls and floors of a massive ancient structure, but the pottery-shards, ancient

bricks and fragmented stone images may be found widely scattered in the area and in the beds of *khala* (storm-water streams). What could have been the circumstances for the decline of that ancient settlement may only be known after thorough archaeological exploration and excavation, but having remained at the mercy of nature for centuries, the area had turned into a wild wasteland until the Hindu Gujar found it safe for rehabilitation.

Under identical semitropical conditions, the mud-built Gujar dwelling at this place, made of *matkanda* walls and covered with *chhappar*, is structurally not much different from the mud-built Labana thatched hut in the Kyarda Doon. Nevertheless, it would be uncharitable to define the immaculately built dwelling unit of the Hindu Gujar as a single-room simplistic *kotha*. For, though the Gujar dwellings in this village are unpretentious single storeyed structures, these are very well-planned homesteads, in which the functional and aesthetic requirements have been subtly integrated to harmonise with the natural ambience around. Figure 2.24 shows an earthen oven in such a house.

Generally, the Hindu Gujar dwelling unit consists of a large living room with an entrance door from the fronting veranda and windows on the sides and back walls. These have regular shutters. The windows are even grilled for safety against wild predators. In front of the room is a spacious veranda, enclosed from the sides, but with an open front. The veranda has been partitioned to make a kitchen on one side, wherein an earthen hearth with multiple cooking-stands is made in a corner. While food may be cooked on the main stand, it is kept warm on the secondary ones. The plinth of the hut is kept about half a metre higher from the surrounding ground. The hut is covered with the usual thatched roof (*chhappar*). On one side of the hut, a detached jungle wood enclosure is made, to serve as a bathroom. In front of the hut is a well-trimmed earthen courtyard on the ground level. A corner of this courtyard also serves as an open-air kitchen during fair-weather conditions. A neatly made earthen oven with multipurpose cooking-stands may be seen at the corner of this courtyard. One such stand is exclusively reserved for boiling milk in a large earthen pot on the simmering heat of dried cow dung cakes. On that heat, milk never boils to overflow, but it becomes thick, brownish and saturated with the mild aroma of the earthenware. The author can never forget the rich taste of *kabadi* that he relished in a Gujar house, prepared in an earthen pot, over a simmering fire. The dish cooked continuously for twenty-four hours; that dish was *kabadi* (a dish cooked and boiled for a prolonged period) in the real sense. On



Fig. 2.24: An earthen oven in a Hindu Gujar's house at Mirpur Kotala.

one side of the dwelling is a small kitchen garden and a little away, an improvised but sturdy jungle wood enclosure to tether cows and buffaloes. The homestead is fenced with jungle wood, reeds, and so on, on all sides, to ward off wild predators.

The exterior and interior of the hut is occasionally plastered with mud and cow dung *gara* and whitewashed. On the whitewashed walls, the women make interesting geometrical, floral, faunal and figural motifs. The doors and windows are framed with colourful bands and floral designs. The Gujar women are dextrous in making earthenware of great variety and sizes for their daily use. By using bamboo strips and reeds as reinforcement, they prepare large sized boxes and silos for storing household items and grains. These containers (Figure 2.25) are known variously as the *kutthala*, *paichhi*, *kothi*, *pedu*, and so on. They also make different types of artistic and functional earthen ovens for cooking, boiling milk, heating water, keeping food warm, and so on. Mostly dried cakes made of the dung of buffaloes or cows are used in these ovens. Some of these ovens are even portable and can be conveniently carried from one place to the other (Figure 2.24).

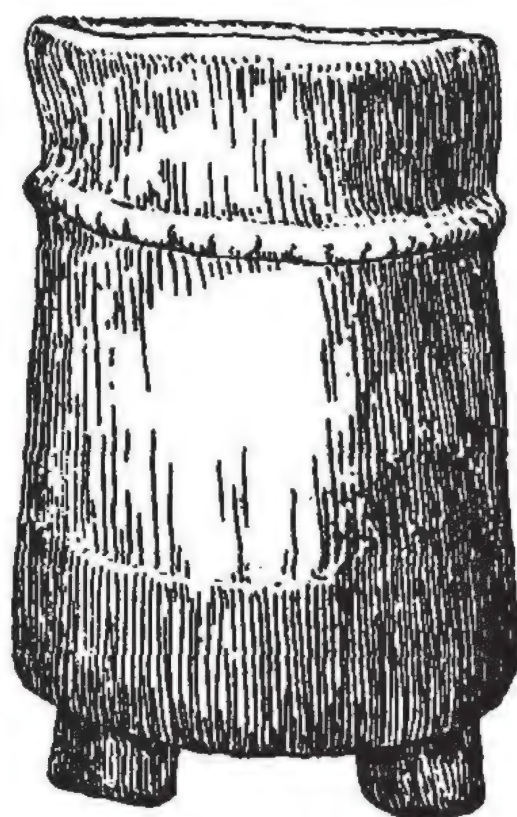


Fig. 2.25: An earthen kutthala

For the Hindu Gujjar women, smearing the floors and the front courtyard with cow-dung is a part of their morning routine. While smearing, they create a soothing chiaroscuro effect by the dextrous manipulation of their fingers. They also decorate the earthenware with innumerable stylised geometrical, phyllomorphic, zoomorphic and anthropomorphic devices. At times, they also make these devices in bas-relief and decorate them with locally available earthen pigments and ultramarine blue. These simple creations, bold and crude as these are, impart colour and charm to their humble forest-dwellings (Figures 2.26 and 2.27).

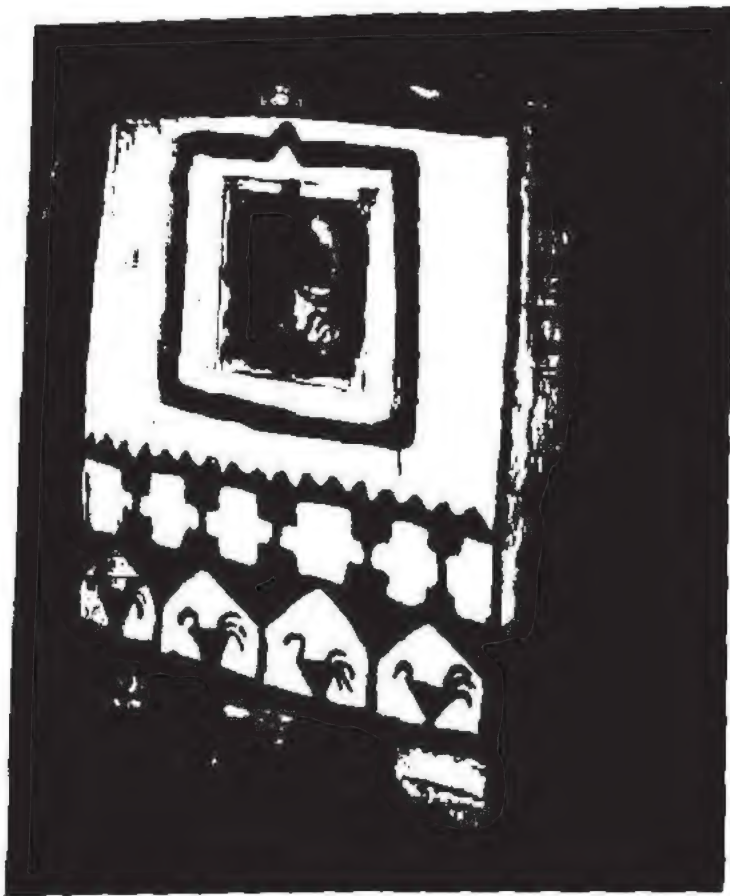
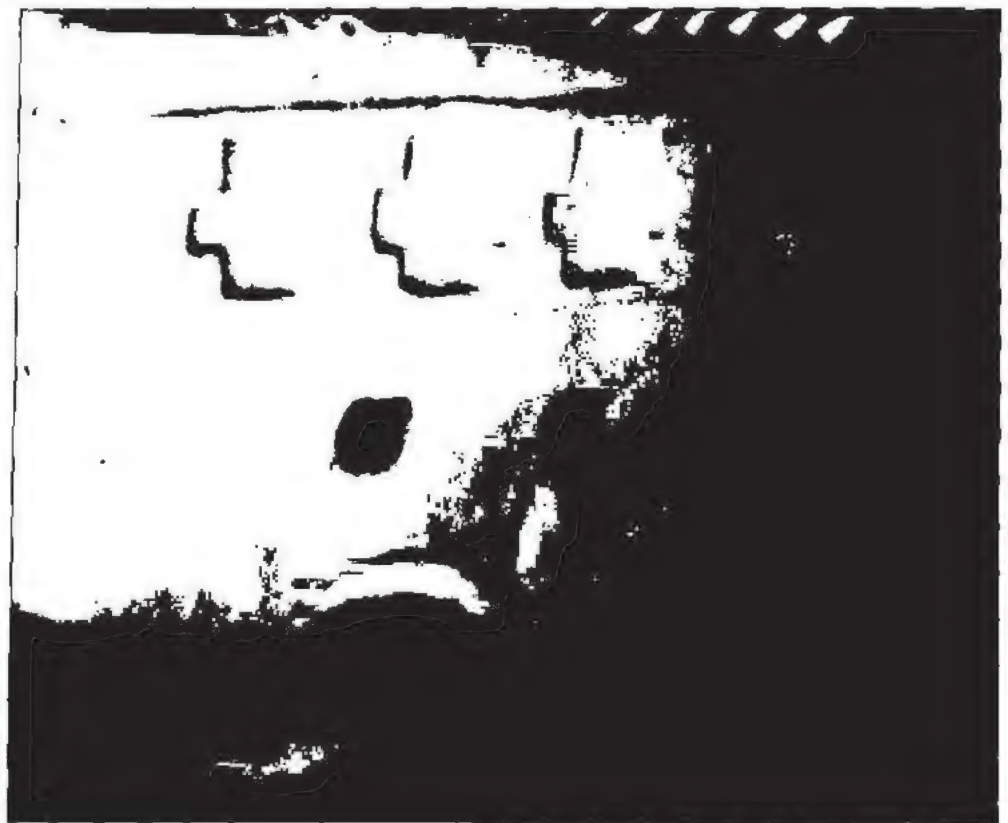


Fig. 2.26: Decorative work on an earthen silo



*Fig. 2.27: Bas-relief
decoration on an earthen bin*

MID-HIMALAYAN DOMESTIC ARCHITECTURE

THE WIDE GEOGRAPHICAL TERRAIN BETWEEN THE OUTER HIMALAYAN RANGE AND the Great Himalayan Range is broadly defined as the mid-Himalayan zone (Figure 3.1). This tract roughly includes the northern part of Jammu area in Jammu and Kashmir, the southern part of Chamba District, the lower part of Kinnaur District, Mandi, Kullu and Shimla districts and the Giri-par part of Sirmaur District in Himachal Pradesh, and Jaunsar-Bawar area of Dehradun District in Uttarakhand. In this region, the climate remains salubrious almost throughout the year. Most of the villages in this region are located in the sunny valleys and on the mountain spurs. In this zone, one may find excessive use of wood in the houses not only because of abundance of structural timber, but also because good quality stone is generally not available in this area.

This zone is rich in the variety of temperate forests at lower heights, containing conifers and broad-leaved trees, succeeded by the alpine growth of oak and conifers higher up, where the mountain slopes are richly covered with deodar. These forests, extending from the floor of the valley to an average height of 3350 m, have provided an inexhaustible supply of good quality timber for building construction.

However, good quality structural stone is rarely available in this zone. The schist stone available here is of inferior quality for structural purposes. It can neither be dressed nor chiselled into blocks nor any type of mortar sticks to it. It can only be sliced into thin slates, which have been the most common roof-covering material in the traditional



Fig. 3.1: *The Mid-Himalayan Mountainscape*

houses of this zone. The only way to use the available schist stone for structural purposes is to lay it flat, one over the other, in irregular courses, without any binding mortar. In that manner, this stone can only be used for small earth-retaining walls and small structures of a secondary nature, but not for multi-storeyed secular or religious buildings. The hereditary *thawin* (carpenter-cum-mason) have devised an ingenious way of using it for structural purposes by packing it between the wooden wall plates in various combinations and permutations. Since wood has been abundantly available in this zone, most of the houses and temples here are lavishly made of wood.

Possibly, before the technique of combining wood and stone for wall construction was developed by the artisans in the western Himalayan interiors, all residential houses were made of wood. This fact is well-illustrated from the houses made entirely out of wood still existing at various places in the interiors of Mandi, Kullu, Shimla and Kinnaur

districts. With an abundance of good quality timber from the coniferous deodar jungles and the inherited expertise to handle wood in diverse ways, the traditional artisans used it liberally without thinking of economising its use. Obviously, that situation tended to the over-exploitation of the precious deodar jungles, which might have warranted economy in the use of wood for residential houses. Therefore, the local traditional artisans devised techniques of combining wood and stone together to ensure uniform distribution of superimposed load, solidity of walls and lateral stability.

Although, there is a great variety in the domestic architecture of the mid-Himalayan zone, there are certain common features in it. The most significant of these are the layout parameters. Under the constraints of mountainous topography, most of the residential houses are built following a linear formation on different terraces, and oriented according to specific local site conditions, rather than the cardinal directions. The houses normally face the valley, even if their entrance is from a different direction. The houses of higher-caste people are generally located apart and are at a higher level than the houses of lower-caste people. Where flat land is available on the mountain spur, the houses may also be built in a clustered formation. However, since level stretches are very rare in the interiors, clustered formation of houses is not commonly found. Even in the floor of the valleys, where reasonably levelled ground is available, people prefer to build their houses a good distance from each other, at different levels that are nearer their *kyar* (wet paddy fields). With an increase in the number of family members, new houses are built around the original house, resulting in a cluster of houses of the same clan in one locality. Such clusters are known as *patti*, that is, hamlets. A number of such hamlets make one village or a revenue unit. A good example of the clustered layout of a village may be the Village Osan on the left bank of Beas near Bhuntar in Kullu District. Located on an elevated mountain spur, this enchanting village offers a magnificent panoramic view of the entire Kullu Valley. Therefore, it may be interesting to briefly study this village and the houses in it, to know about the types of houses in the Kullu Valley.

OSAN VILLAGE IN KULLU VALLEY

On the left bank of Beas, opposite Bhuntar, a steep and deeply furrowed foot track winds through forest-clad luxuriant glens and ridges to the temple-village Dyer, atop a mountain ledge. Midway along the ascent is the enchanting village of Osan, perched on

a terraced clearing amidst a dense jungle of rhododendron, deodar and ban-oak (Figure 3.2). Situated on a commanding height, the village offers a bewitching view of the vast Kullu Valley down below and the snow-clad peaks of the Zaskar Range in the distant northern horizon. Osan is a typical example of villages in the Kullu Valley. The well



Fig. 3.2: Osan Village: a rural setting in Kullu Valley

laid freestanding large and double storeyed slate-roofed houses are conveniently spaced apart from each other on the flat and open terraces. The open verandas on each floor, surrounding the rooms make these houses not only functionally compatible with the agrarian lifestyle of the people, but spacious and airy too. These verandas are the most used part of the houses, where one can congregate, work, sit, relax and doze, during the daytime, and also spread out grains and other farm products for drying. People

spend most of their waking hours in these open verandas, and even sleep there during the summer months. On one corner of the veranda may also be seen the traditional handloom, where one of the male members of the family may be found weaving. In fact, handloom is an integral part of the Kullu household and each adult male member of the household is a proficient weaver. For women, sitting on the loom is a customary taboo, but of late, they are also seen working on the handlooms. Weaving has been a traditional household activity of Kullu area, and the traditional Kullu shawls are known the world over for their colourful patterns and designs.

Around each house at Osan, as elsewhere in the Mandi-Kullu area, one may find terraced fields, in which people grow vegetables for their own use and for selling. Cucurbits grow abundantly in this area. People grow these around their houses so that the creepers can climb the trees and rooftops. It is usual to find large orange-coloured pumpkins suspended from the peach trees and rooftops in autumn in Osan Village, as elsewhere in this area. On the corners may also be seen dried grass and stems of maize piled into dome-like stakes for use during the winter.

The houses in Osan Village are unpretentious and unsophisticated, consisting of rooms arranged in a linear formation, with the wide verandas running in front and along the sides. Each of the independent rooms is entered from the fronting veranda. The first storey is generally the living floor, where the rooms are used for sleeping, storage, cooking, and so on. The rooms on the ground floor are normally used for tethering milch cattle only. The other cattle are tethered in the barn, built away from the residential houses. Usually the plinth height of houses is kept low for the convenience of cattle. In front of every house, there is a large flagstone paved and parapet-bound sunken courtyard, locally called *khwala*. This multipurpose area is used for threshing crops, winnowing grains and performing other agrarian chores. Improvised jungle wood bathrooms can be seen in some of the houses.

Good quality slates are easily available in Kullu area and people prefer these to CGI sheets to use as roof covering. Wood has been used extensively in the houses at Osan, and this holds good for the traditional Kullu houses elsewhere in the interiors. The flooring of the ground floor is normally made of flagstones, but the upper floors are made of thick wooden planks. No mud or cow dung is used for flooring, but the flooring planks are kept without any coatings. In most of the houses, a wooden plank ceiling is also provided. Since good quality structural stone is scarce in the area, as in most of the interiors, the available schist stone is laid dry between the wooden

frameworks to construct the type of walls, popularly known as *katth-kuni* and *dhol-maide*, depending upon the number of courses of stone between the wooden binders.

The house-type in the Osan Village is one example of wood-based domestic architecture of the mid-Himalayan region, where the Khasha population predominates. Interestingly, wood-based architecture has traditionally been patronised by them, despite the fact that besides the Khasha, some other ethnic communities also inhabit that region.

For instance, the semi-nomadic and transhumant Gujjar of the Jammu-Chamba region and other places in the interiors generally build rustic stone and mud dwellings called *myharas* or *kothas*. Similarly, the Gaddi house in the Gadderan area of Chamba is literally a primitive and rustic type of structure, reflecting their transhumant lifestyle. Further, though a majority of the Pangwals and Churahis of Chamba may find their roots in the Khasha ethnic stock, yet under various influences and traditions, they now largely represent an amalgamated ethnicity, well-reflected not only in their domestic architecture but in religion, as well. The Pangwal and Churahi houses appear to be double storeyed structures from the valley side, but those are essentially all-purpose single room units, in which cattle and family live together around a central fire-range. Externally these do not look much different from the *darabas* or *kothas*, emerging forth from the mountain profile. In the lower part of Kinnaur District, wood-based domestic architecture forms a distinct class by itself for its functional, structural and artistic peculiarities.

The local architectural peculiarities notwithstanding, the majority of houses in the mid-Himalayan zone are the wood-based multi-storeyed and ostentatious structures existing in areas in the Kullu, Mandi and Shimla districts, where the Khasha population predominates. Ornamented with elaborate wooden façades and high-pitched complex roofs, these houses form a distinct class by themselves. Therefore, it is appropriate if the indigenous wood-based architecture is attributed to them and termed 'Khasha architecture'.

Thus, excluding the house-type of the Muslim Gujjar, that has been already discussed in the previous chapter, domestic architecture will be further looked at under five broad headings: (1) Gaddi domestic architecture of Chamba; (2) Pangwal domestic architecture; (3) Churahi domestic architecture; (4) Khasha domestic architecture; and (5) Kinnar architecture.

THE DOMESTIC GADDI ARCHITECTURE OF CHAMBA REGION

Before a review of the traditional domestic architecture of the Gaddi, it may be advantageous to get a feel of the area where these people live. The enchanting homeland of Gaddi, deep in the Ravi Valley of Chamba has popularly been known as the Gadderan. It is one of the most rugged terrains of the mountainous western Himalayan interiors. The author visited this romantic land and its principal Village, Brahmaur (average height 2135 m above mean sea level) first about forty-six years ago. Brahmaur at that time was considered one of the remotest places in the Himalayan interiors, accessible only by foot. The author had to trek a distance of more than 60 km from Chamba, because the road that existed then was no better than a widened footpath (see a view of the Chamba town in Figure 3.3). Seeing the perilous condition of that road, he could well appreciate the warning written on the rickety old buses, '*sawari apane jan-mal ki khud zimewar hogi*', (passenger shall himself be responsible for his life and luggage!). Once at Brahmaur, one was obliged to report to Nag Baba. He was the all-powerful



Fig. 3.3: A panoramic view of Chamba town

spiritual and temporal guru of the Gaddi. His writ ran large in the entire Gadderan territory. He had settled in one of the old buildings beside the Chaurasi-complex at Brahmaur. So powerful was his influence over the Gaddi that no outsider could get shelter in Brahmaur without his express approval. The author also had to report to him and seek his 'grace' for his mission, which was well granted, making his stay in the Gadderan very rewarding and comfortable.

Brahmaur of those days was a calm and sleepy village, and so were its inhabitants – the Gaddi – *unmindful of its glorious past* and the magnificent wooden and stone temples of the early Mediaeval times around them. With its age-old wooden houses, raised in multi-storeys on the *thatthar* and *faraque* walls, girdling the Chaurasi-complex, one could feel the nostalgic ambience of the hoary past that pervaded all over the locality. That effect was heightened manifold by the curly smoke that rose from the dwellings and mingled with the orange and grey clouds hovering against the glittering snow on the Mani Mahesh Kailash in the distant horizon.

Now forty-six years later, the scenario has radically transformed. Nag Baba is no more. His framed picture is placed where he normally used to sit. Brahmaur now is a sub-divisional headquarter and a full-fledged town of sorts, duly linked by a 62 km long, reasonably all-weather and asphalt-topped motor road. The village has been literally bursting at its seams, with the stereotyped clumsy concrete structures popping up everywhere, dwarfing the ancient Mani Mahesh temple, the landmark of Brahmaur, and the mighty deodar trees around. In fact, the author found it hard to locate those magnificent landmarks of his first visit from a distance. Brahmaur today is a humming little town with a quasi-cosmopolitan character. There are hotels (*dhaba*) – tea stalls lining the way to Chaurasi, the socio-cultural and religious nerve-centre of the area. Along the streets, one can find video parlours, hairdresser saloons and what not. Brahmaur and the entire Gadderan area has been reaping the benefits of its 'scheduled tribe' status and economic development in many ways, but the Gaddi are oblivious to what they have lost by way of moral, cultural and environmental change because of these development activities. The Gaddi seem to have lost their identity as an indigenous community. The cultural erosion is so ominously rapid that in a few years' time this colourful community with its hoary past, colourful costumes, rich folklore and quintessential way of life may soon become unidentifiable among the multitude of common folks. What shall remain behind will be monumental material relics – the old houses and temples, for posterity – reminders of a lost culture. The road side slate

quarry can be seen near the Brahmaur town (Figure 3.4). With this background, one may be in a better position to understand the residential pattern of the Gaddi habitat and study the layout of their houses and the traditional method of building them.

The traditional Gaddi house is literally a primitive and rustic type of structure, which unmistakably reflects their transhumant lifestyle. The one-room multipurpose dwelling area for each household on each floor in a multi-storeyed house may clearly indicate the casual manner in which the happy-go-lucky Gaddi build their houses, largely by community participation, and the way they use them. Ironically, against such residential structures, the wooden and stone temples of the Gadderan area are some of the finest and most ancient examples of classical architecture in the entire Himalayan region. Surely, the architects of these magnificent wooden temples could not have been the carefree and leisurely Gaddi or their mediaeval predecessors, but outsiders from Kashmir and the Gangetic plains in the mainland.



Fig. 3.4: A roadside slate quarry on the way to Brahmaur

The Gadderan is a rugged and rocky tract, where most of the villages are located higher up on the slopes and on the spurs of the jagged mountainous ranges. Since level stretches are rare on such rocky and steep locations, the houses are built along the contours on the steep and narrow terraces, preferably on the ledges, where the soil strata are assuredly rocky and stable. The houses normally face the valley, for the orientation of a house is regulated more by the specific local site conditions rather than the cardinal directions. Such arrangement of houses normally follows a linear horseshoe formation as at Brahmaur and in most of the large villages of the Gadderan area. However, there are few large villages in this area due to biophysical constraints. Since suitable land at such locations is scarce, there is little scope for the houses to expand horizontally, but the rocky strata is stable and strong enough to withstand a heavy superimposed load. The Gaddi have taken full advantage of this property of rock and soil and built multi-storeyed houses.

However, along the banks of the rivers and streams, uneven flat stretches are also found, but only few such places are regarded safe for habitation. Not only that, most of these places are located, in deep and narrow gorges exposed to landslides and falling rocks, from the steep mountain slopes and inundation. The houses in such tablelands are huddled together in a haphazard manner, in a clustered formation on different terraces. These houses are spread horizontally on the ground and are mostly single or double storeyed.

Generally the houses in the Gaddi villages are connected by tortuous lanes and bypaths. Although most of these lanes are paved with locally available flagstones, but in the absence of a proper drainage system, these usually remain muddy and filthy due to the wastewater flowing over them from the houses. Usually the houses belonging to the upper and lower caste communities are located separately. However, in the case of larger villages, the houses of higher-caste people are located close together on the higher terraces, separated from the houses of lower castes, namely, the Arya, and Bensi, and so on. Thus, such larger villages may comprise many *patti* (hamlets). Each house in the Gadderan area has an open circular yard for threshing grains. This yard is known as the *kbalyan* (Hindi term – *khaliban*). The *kbalyan* is neatly paved with thick slates and enclosed by a parapet wall. Besides, threshing of grains, this yard serves as a multipurpose open space for the household. During fair-weather, cattle are tethered in it, clothes and grains are spread for drying and womenfolk bask in the sun, while doing many domestic chores.

The houses of the Gadderan area form a class by themselves because of certain quintessential architectural and constructional features, found nowhere else in the Himalayan interiors, not even in the Chamba District outside the Gadderan territory. For instance, the consumption of wood in the construction of *tthatthar* (Figure 3.5) and *faraque* type walls, typical to this area, is far less in comparison to the composite wood-and-stone walls, so common in the rest of the western and central Himalayan interiors. Similarly, one may find an independent cooking place, representing an independent household, on each floor of the multi-storeyed houses in the Gadderan area, a practice unknown elsewhere in the region. For such peculiarities in the Gaddi domestic architecture, more than the physical factors, the human factors – social, cultural and economic imperatives – are mainly responsible.

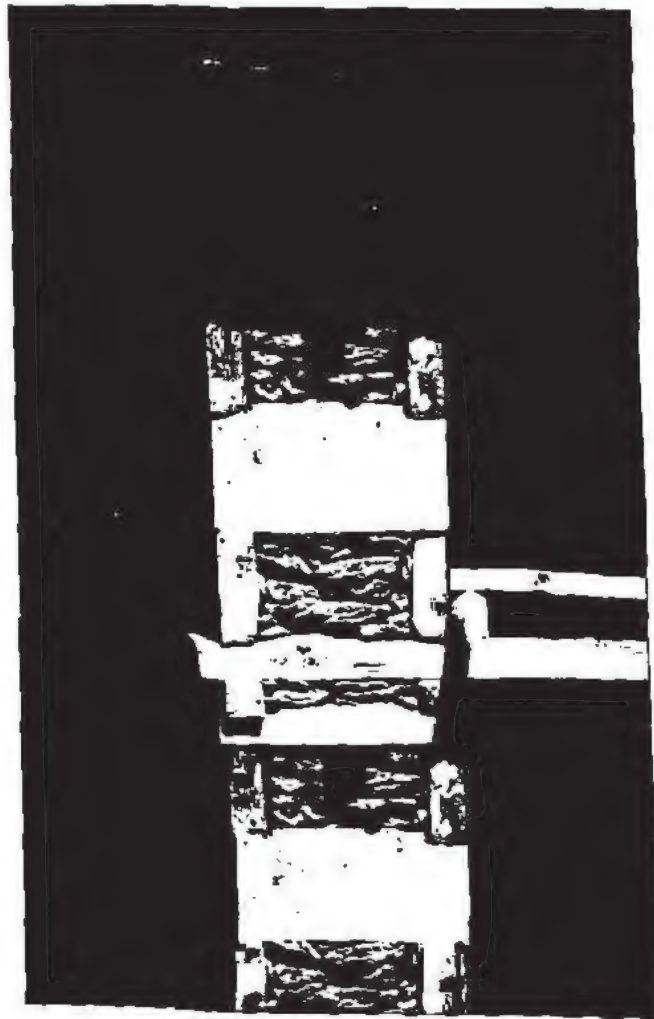


Fig. 3.5: A typical stone-filled pillar of wooden planks (*Tthatthar*)

A significant feature of house construction in the Gadderan area is that no skilled or unskilled labour is employed from outside the community for any building operation. In some instances, services of a professional carpenter may be solicited for specialised woodwork, but such a carpenter himself may not be a hereditary professional woodworker. In fact, a carpenter in the Gadderan territory is a skilled artisan by choice, and not by compulsion or inheritance. He may even be a Brahman, who has opted to be a carpenter, possibly because he can earn more as a carpenter than by following the inherited priestly profession, and he can as well happily work on both fronts simultaneously!

The absence of a hereditary professional caste of a woodworker in the Gadderan territory is a pointer to the fact that enough work has never been available for the professional carpenters in this area, and anyone could adopt it as a supplementary vocation. The entire range of construction and building work, including most of the woodwork, is accomplished through customary community participation, known as *kewar* or *saret*, under the traditional *bartandari* system. Under this system, days are mutually arranged for contribution of labour by each household. Each household in the village provides one male. All the men so engaged are treated in the evening to meals and *sur* (homemade liquor) by the host. This system is quite similar to such institutions known by different names, such as the *dar*, *jwari*, *haila lagana*, *tthela*, *daruch* or *buara*, and so on, in other parts of the Himalayan region, noted earlier.

The Gadderan area is rich in a variety of forests, ranging from the conifers and broad-leaved trees at lower elevations to the alpine exuberance of oaks and pines at the higher reaches, where the mountain slopes are covered with thick deodar forests. These forests have provided an inexhaustible supply of quality timber for building construction, for which good structural stone is rarely available. All that is available from the stone quarries is the mica-laden slate schist, which can only be sliced into thick stone slabs and thin slates, but is unsuitable for structural purposes, as explained earlier. The thick flat stones are used for paving floors, courtyards, lanes, and so on, and the thin properly trimmed slates are used as roof-covering material for houses and temples. Since procuring fine slates is costly, most people opt for the thick and rough unhewn slates for covering the roofs of their houses. However, there is no compromise on covering temple roofs, where the finest quality of slate is used.

As elsewhere in the region, three major ceremonies are involved in the construction of a house in the Gadderan territory. However, what makes these ceremonies different

from the ones outside the Gadderan territory, is the manner in which these are consummated here. The laying of the foundation is similar to the practices elsewhere, but a goat may be sacrificed on this occasion. The family Brahman (or *chela*, that is, a sorcerer) is invited to find an auspicious occasion for laying the foundation stone and deciding the layout and orientation of the *dwari*, that is, the main entrance. While the edict of the Brahman may prevail regarding the date and time of laying the foundation stone, his prescription about the layout and orientation is merely a formality: the local geophysical condition, rather than the decision of the Brahman, defines the house layout and orientation. Nevertheless, the Brahman consults astrological texts from the *Bastu Sarani* to settle the orientation and layout of the proposed house to meet the ritual obligations. The house is always planned on a rectangular layout, preferably along the contours. Under the obtaining site conditions, a house on the steep mountainous slope can only be built along the contours, and that consideration settles the location of the *dwari*, the main entrance.

The second and the most important ceremony related to the house construction, is laying of the ridgepole, locally called *baranda*. On this occasion, a goat is taken up onto the *baranda*, where it is ritually offered to the deity. The deity signals his acceptance of the offering by *bijan* – that is, the animal shivering when water is sprinkled over it. The goat is then brought down and sacrificed. Its entrails are suspended from the *baranda* as a ritual offering to the *griha-devta*, that is, the household-god. Although this sacrificial ritual is common in the entire Himalayan interior, yet suspending the entrails from the *baranda* may be typical to only the Gadderan area. The author has not seen this practice elsewhere in the interiors. The house is considered ritually complete after this ceremony.

The third and last ceremony is the housewarming celebration, known as the *pathraitna*. It is an occasion for community feasting and rejoicing. On this occasion, the host entertains and provides a thanksgiving feast for his relatives, friends and villagers. The host may also offer *nawala* to Shiv, the supreme god of the Gadderan area, to invoke his blessings. It is an elaborate and expensive propitiatory ceremony, involving sacrifice of a number of goats to Shiv. The term *nawala* may be a derivative from the classical word *nav-alaya*, that is, a new house. However, it could also mean *nav-mala*, that is, a new garland.

The traditional way of laying the foundation is very simple. The foundation rarely goes beyond 30 cm into the ground even for a multi-storeyed house, because the

sterile topsoil on the substrata is not thick, and after some digging the rocky strata are conveniently exposed. This rocky substratum has enormous load bearing capacity to sustain the superimposed dead load of a three or more storeys high building. A Gaddi house (Figure 3.6) is normally a three or more storey high structure, which has to withstand high wind pressure, heavy snowstorms and tremors, but the traditional *tthatthar* and *faraque* have effectively withstood the ravages of time and the elements.

To prepare the foundation, large and thick mica-schist stone slabs are hand-packed into the foundation. This process is repeated until the fill reaches a few centimetres above the surrounding ground level. This casual but time-tested style of preparing the foundation is typical to the Gadderan territory, rarely seen elsewhere. In fact, the old buildings built in the traditional style with such flexible foundations have withstood tremors and vagaries of nature, while the modern buildings, built in the formal manner of the Public Works Department (PWD) specifications, have proved the fallacy of using rigid stone and cement structures.

On the foundation so raised, pillars are erected in the corners and suitably in between them to form a grid, depending upon the size of the proposed house. These pillars are known as *tthatthar*. At times, the gaps between the *tthatthar* are covered with thick and roughly hewn wooden planks instead of the full-width dry-stone masonry wall. Such a curtain wall is known as the *faraque*. Sometime, the *dhajji* wall is also provided between the *tthatthar* in place of the *faraque*. These walls shall be discussed in detail in Chapter 7.

The flooring of the *obara*, that is, the ground floor, is made of rough flat stones. At times, gaps between the stones are filled with mud and cow dung mixture. All the upper floors are made by spanning joists and beams on the walls. When span is larger, a wooden post may be provided in the middle, known as *thumbi*. Thick wooden planks are laid on the joists. Normally, no other flooring treatment is applied, because the mica-laden grey clay has very poor adhesive quality: when moist it is sticky, but once dry, it simply turns into powdery dust. For that reason, it is not good for plastering. Nevertheless, in some cases, a layer of a mixture of mud and cow dung is applied over the wooden planks. For that purpose, people procure clay from suitable clay pits. To make such mud floors durable, they are occasionally treated with a fluid solution of cow dung. This plugs cracks in the mud flooring. In the cow dung solution, a liberal quantity of *gyontar*, that is, *go-mutra* (the urine of cow) is added. It is believed that the *gyontar* acts as a strong disinfecting agent.

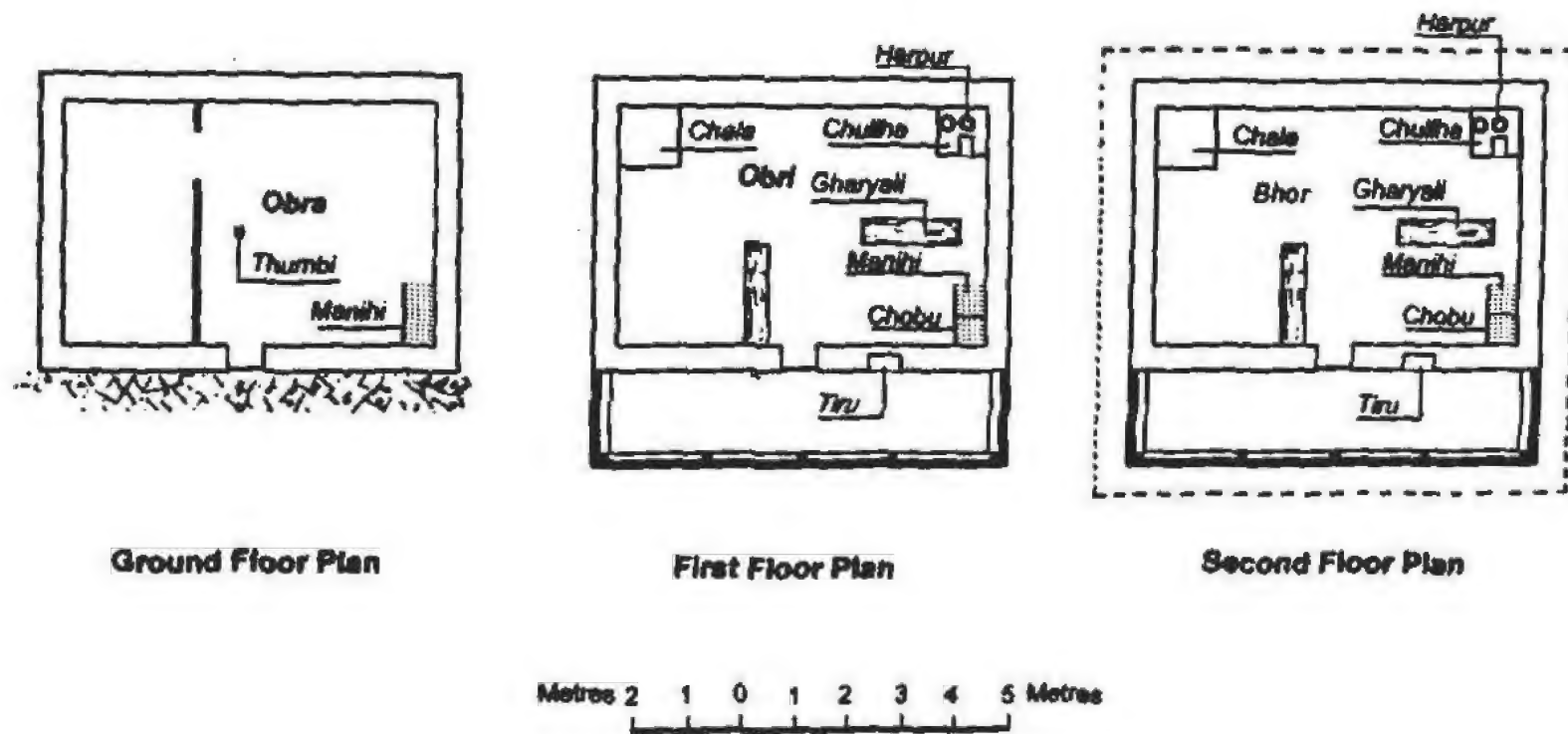


Fig. 3.6: Plan of a typical Gaddi house

The roofing arrangement is a simple affair, for the Gaddi do not have any idea of fabricating trusses. Possibly, they never required that elaborate contraption. They employed the age-old method of supporting the roof-rafters (*nhas*) on the wall plates (*kanaran*) on the sides and the ridgepole, placed at the centre over the *tibatthars*. Over the *nhas*, thick wooden roofing-planks (*tibatthsari*) are laid. Over these roofing-planks, thick slates of irregular sizes are nailed. The roof is projected considerably beyond the supports to protect the exterior of the building from the direct effect of snow and rain.

A traditional Gaddi house never has any window on the outer walls, but only a small entrance door (*dwari*) on the ground floor (*obara*). Thus, the multi-storeyed Gaddi house looks more like a mini-castle than a dwelling. However, the Gaddis are now increasingly opting for a more settled style of living, because of the statutory restriction imposed on the customary grazing rights for their flocks in several traditional grazing areas – that has discouraged transhumance. This change is reflected on the style of their dwellings, which are now provided with small openings, called *toblu*, on different floors. In most of the ‘modern’ Gaddi houses now even small windows with iron gratings may also be seen.

The lowest floor of a house, the *obara*, is necessarily used as a barn for the cattle and for storing fuel and fodder. Generally, it is a single large room. This room is sometimes divided into two functional areas by an improvised partition. The spacious part is reserved for the barn and the smaller one, for storing implements, fuel, and so on. The *obara* is a dark and dingy room, with only one small door, called *dwari*, which is hardly larger than 150 x 90 cm. For ventilation, small holes, called *toblu*, are left on the sidewalls. Sometimes, an improvised extra accommodation for tethering cattle may be added alongside the *obara*, known as the *ora*. On one corner of the *obara*, a stepladder, known as the *manjhi*, *paran* or *sanari*, is provided to reach the upper floor through a trapdoor, called *chobu*. A stepladder may be a single flight wooden staircase or a notched wooded log. Such stepladders and trapdoors are provided in the corner on each upper floor to provide access to the floor above.

The upper floors are generally residential in nature. The first floor is called *obari*, the second floor is the *bhor* and the third floor is the *mandeh*. At times, the third floor is not fully enclosed, but kept open on two sides to give it a veranda-like appearance. In that case, it is called *sal*, and is used for storing grass, firewood, and so on.

According to the Gaddi social system, a bridegroom is supposed to establish his own elementary home soon after he gets married. It is unusual for the married brothers' wives to occupy the same fireplace. Traditional joint families are unusual among the Gaddi, though the joint family has been an accepted system in the entire Himalayan interiors (Newell 1967: 34). Each upper floor of a Gaddi dwelling is a compact all-purpose large room, divided into several functional areas for living, sleeping, storage, cooking, and so on. In one corner of the room, a small space is paved with a thick one-piece slate for washing utensils and an outlet is provided in the wall for draining out the wastewater. It is called *chala*. Utensils are washed in the *chala* and the female members of the family may take an occasional bath there. A Gaddi house does not have the luxury of an independent bathroom or lavatory. People go out in the fields to ease themselves. The *chullha*, that is, the hearth or cooking range, is made in a corner of the room. Besides the main cooking-stand, the Gaddi *chullha* has a couple of secondary stands, called *harpur*. Cooked food may be placed on the *harpur* to keep it warm. In a Gaddi house, there is no provision for smoke to escape from the room. Sometimes, a *toblu* may be left on the wall just above the *chullha*, or smoke keeps on collecting in the room itself. While others may feel suffocated in that room, the Gaddi family, conditioned to that situation, finds this normal. However, on the top floor, a slate, called *bonti*, is loosely fixed on the roof just above the *chullha*. This slate may be pushed to one side for smoke to escape, but it is replaced at the time of rain or snow. Near the *chullha*, a 30 cm high wooden platform is made. This platform is known as the *gharyali* or *hadupu*. On it, the utensils of daily use and water pots are kept (Figure 3.7).

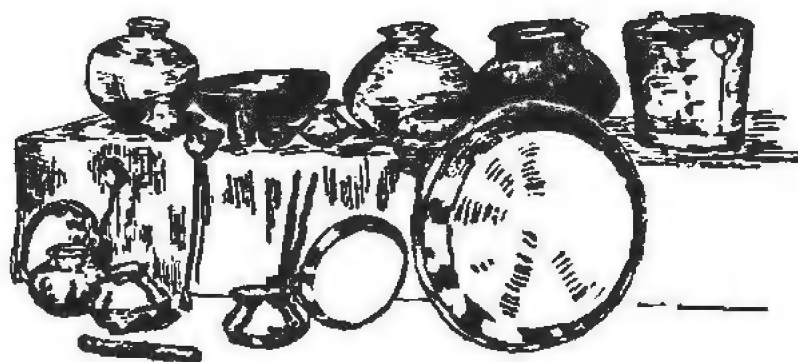


Fig. 3.7: The *Gharyali* or *Hadupu* for keeping utensils and water pots

Earthenware is rare in the Gadderan area. No cupboard or cornice is provided in the room, but a small niche, called *tiru* or *kbudi*, is provided for enshrining the household deity, mostly a *Nag Devta*.

Each floor has a cantilevered veranda, about 1 m wide, running in front. This veranda is known as the *dragra* or *behi*. The *dragra* is generally kept open and without railings, but at times, it may be partly enclosed with thick and rough wooden planks to create a safe storage space. It is a place for daytime household chores and for the family members to congregate, work, sit, relax and doze. It also serves as a secure area for spreading and drying grains. A loom may also find a place in one corner of this veranda.

Most of the building construction material – stone, slate, clay, and so on – is locally available around the villages; it is collected through community participation. Wood is procured from the deodar jungles at the customary concessional right-holder's rates. As explained earlier, the practice has been common everywhere in the Himalayan interiors. While the use of wood has been very lavish and artistically done in almost every village house in the interiors of Mandi, Kullu, Shimla and Kinnaur districts, the Gadderan territory is an exception in this regard. Here, not only is the use of wood less in comparison, in residential houses but workmanship is also crude. The only plausible reason for this may be that handling of wood required the service of a skilled artisan and considerable time, about which the Gaddi were not keen because of the constraint of their agro-pastoral transhumant routine. Therefore, the Gaddi improvised the use of wood in their own simple way. This resulted in roughly hewn thick planks of irregular sizes being used artlessly and in a haphazard manner in the building, without proper joinery.

A traditional Gaddi house is not an impressive structure. Rather, it looks outlandish and rustic even in its finished form, which reflects the Gaddi's naïve semi-pastoral and semi-agrarian lifestyle. Nevertheless, the architectural and structural aspects of these dwellings are ideally compatible with the local environment. The tall structures are so raised that these may tilt under the uneven settlement of foundation or due to tremors, but would not collapse. There is hardly any rigidly fixed or firmly jointed structural component in it. No mortar is used in laying stones, and even the use of iron nails is minimal. For that reason, centuries old traditional residential houses (Figure 3.8) may still be found standing in a habitable condition in the Gadderan territory, although many of these have tilted because of natural vagaries.

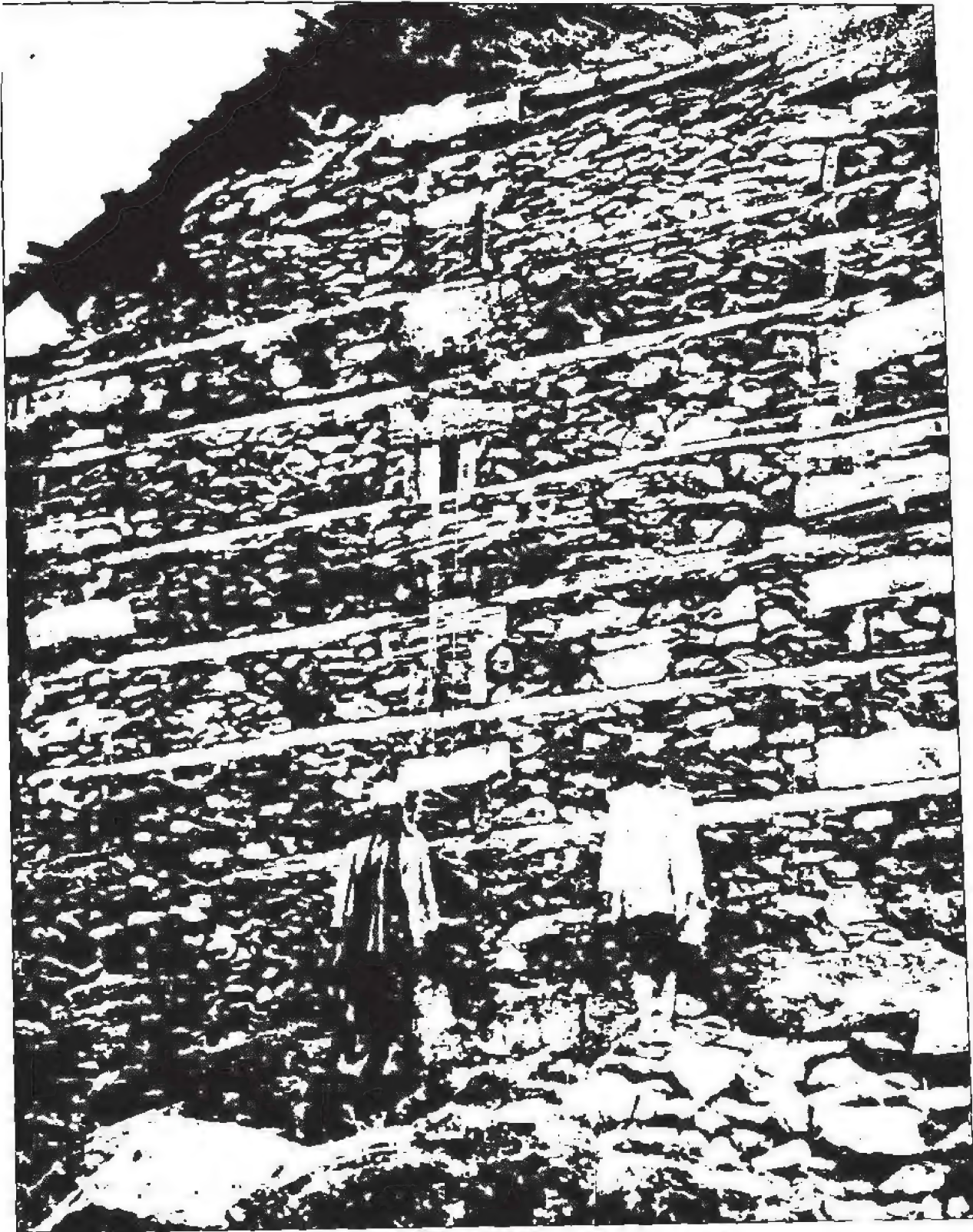


Fig. 3.8: The oldest house built in a traditional manner at Brahmaur

On the other hand, the ancient Kardar *kothi* at Brahmaur was devastated by the Kangra Earthquake of 4 April 1905 (Vogel 1909: 34-35). This *kothi*, ascribed to Raja Prithvi Singh (1641-1664 CE) of Chamba, was embellished with carved wooden ceiling panels and a carved entrance door. The extant carved structural parts of that building, especially some of the ceiling panels and the carved door shutter, were removed and kept in the Bhuri Singh Museum at Chamba. These figure-laden carved wooden relics clearly reflect the influence of Mughal art on the art tradition of Chamba. The wood carved figures in the Kardar *kothi* is the only example of carved woodwork in a secular building in the entire Gadderan territory. No such evidence of woodcarving in secular buildings has been reported from elsewhere in Brahmaur. One also does not find any evidence of art woodwork done by a local Gaddi artisan in a residential house in the entire Gadderan area. Interestingly, from the extant structural parts of that *kothi*, it is evident that it was not built in the traditional Gaddi style by the Gaddi artisans, but in the urbane and feudal architectural style of Chamba by the immigrant artisans, especially the woodcarvers. One of these artisans was Chetru, from Chamba (Newell 1967: 34). This *kothi* succumbed to the earthquake, while apparently much older residential houses built in the traditional local style withstood that tremor.

When the superb architecture and artwork of the early wooden temples in the Gadderan territory, as at Chitrari, Brahmaur and Markul, is compared with the naïve traditional domestic architecture of the area, one striking fact emerges. While the early wood-based architecture and artwork was highly sophisticated and classical in every sense of the term, Gaddi domestic architecture has been rustic and artless. That makes the author think that the earlier classical art and architecture of Gadderan area was not the product of the Gaddi, but of the immigrant non-Gaddi artisans, the Khasha. Under the arduous agro-pastoral mixed economy, the Gaddi might not have been able to imbibe the finer nuances of living from their predecessors of the Brahmpur kingdom, which is strikingly reflected in their naïve and rustic but captivating costumes and ornaments as well. The architecture and construction techniques of their dwellings are also influenced by the same simple psychology.

Evidently, the Gaddi never took to building their houses seriously, but relied upon improvisation. That fact is evident not only from the way their houses are built through community participation, usually without involving any skilled artisan, but also from the distribution of space within. All these features indicate a sort of makeshift camping arrangement.

THE PANGWAL DOMESTIC ARCHITECTURE

Across the forbidding Sach Pass (4414 m above mean sea level), some 140 km away from Chamba, the district headquarters of the district of that name, is the Village Kilar in the Pangi or Chandrabhaga (the Chenab) Valley. This multi-caste village comprises four peripheral *patti* (hamlets) – (1) Kupha, (2) Parmas, (3) Thamoh (Karoti) and (4) Malet – all converging at Chowki (the central post), the administrative headquarters of Pangi tehsil. People of various castes – Brahman, Rajput, Arya, and Lohar – are evenly distributed in all these *patti* and they live in communal harmony. Perhaps the life of hardship has bound them together to face the challenges of nature. Sach Pass has been the only traditional access to this landlocked area from the outside world. Yet, so perilous had been the access across this pass even in fair-weather conditions, that every State official proceeding to Pangi on duty was granted a special allowance (under the head funeral expenses) as he was not expected to return. For the same reason, Pangi was formerly used as a place of banishment for criminals and political offenders. Now, there is a fair-weather vehicular road from Udaipur in Lahul to Pangi Valley, but this lengthy and tortuous route with the dangers of sliding rocks from the rugged mountain slopes and the deep and dark Chandrabhaga below make the journey unsafe (Figure 3.9).

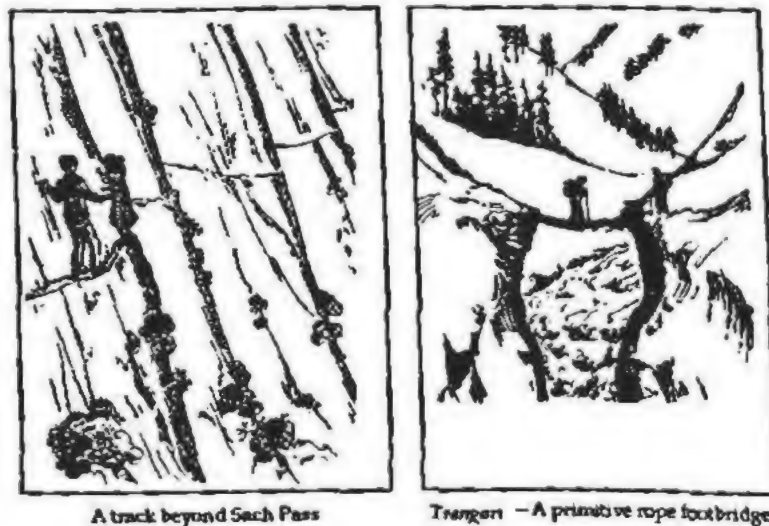


Fig. 3.9: On the way to Pangi Valley across the Sach Pass

The trackless path across the Sach Pass is the most frequented route. To enter this valley, one has to start from Satrundi, a staging hut before Sach Pass, well before daybreak, so that one reaches Dunai, the other staging hut on the other side of the pass some 20 km away, well before noon, lest one falls victim to the unrelenting elements. The path from this pass to Dunai is treacherous, with tiring trackless glaciated stretches. Therefore, one has to be extra careful to find and follow only the visible beaten tracks on the glaciers. Even a minor slip may prove fatal: a thin layer of ice on the surface may break, hurling one to certain death in the gushing icy waters beneath the glacier. Secondly, one has to be very careful about the boulders that may menacingly roll down from the mountain slopes, as a result of the melting of ice under the sun. Despite all these perils, the socio-cultural microcosm of Pangi Valley and its mysterious ambience has a nostalgic charm for challenge seekers. Speaking of the wild beauty of Pangi Valley, J. Hutchison (1996) once observed:

Pangi is unique in its grandeur and beauty: in this respect far surpassing any other portion of the State. The scenery is sublime and imposing, and nature appears in her wildest and grandest moods. Everything is on a stupendous scale. The great river rolls along in a deep and narrow gorge, lashing itself into fury against the adamantine cliffs that confine it. Precipices spring from the brink, in places almost perpendicular, to a height of one or two thousand feet. On the lower ranges are grassy slopes of rich pasture with dense forests of pine and cedar, while high over all, the stern and majestic mountains, piled on one another, attain an altitude of 18,000 to 21,000 feet (5488 to 6402 metres), rising far beyond the line of eternal snow. But all is not sublimity and grandeur. Every few miles the traveller reaches fairly open nooks of surpassing beauty, which may have been small lakes in some bygone age, while the river was cutting its way through a rocky barrier in front. There the villages are chiefly to be found. These are few in number, and of small size, for the country is sparsely inhabited. The roads are, just what one might expect in such a region, narrow, winding and dangerous; so narrow indeed, that in some places there is barely room for two people to pass each other; in other parts the precipice affords no space for a road, which has to be carried along the face of the cliff, supported on iron bars fixed horizontally into the rock. Elsewhere the path crosses from ledge to ledge by means of *trangaris*, or narrow wooden bridge of a primitive and insecure kind, sometimes at a giddy height above the torrent. There are several beautiful side valleys in Pangi of which the principal are the Saichu, Parmaur, Hunan, and Sural Nalas, all leading up to the

Zaskar Range. Though narrow where they join the main valley they are fairly open higher up – and contain a considerable number of villages. Those near the head of each *nala* are occupied by Tibetans, called Bhot, and for this reason are called 'Bhotauri'.

Confined to such inhospitable terrain, barricaded by the ominous mountain ranges and treacherous precipices, the Pangwals (that is, the people of conglomerate ethnicity inhabiting Pangi Valley) have remained sequestered from the outside world for centuries. In their socio-economic dealings, they feel closer to their Kirati counterparts across the Great Himalayan Range in the Zaskar area of Jammu and Kashmir and the Lahulis in the Pattan Valley of Lahul than to the Churahis (who shall be discussed later) on the other side of Sach Pass. Under such natural and human compulsions, the Pangwals have evolved a typical lifestyle and belief system centred on ophiolatry. *Debant* (Det) Nag is a very powerful god of this valley. He has a small but beautiful wooden temple at Kilar. Interestingly, numerous elements of Hinduism and Buddhism may be found integrated in the local belief system and those may be found vividly reflected in the decorative wooden elements of their religious and domestic architecture (Figure 3.10).

Landlocked between two mighty mountain ranges, monsoons seldom penetrate the Pangi Valley, where arid to semi-arid alpine climatic conditions persist throughout the year. Therefore, the area is prone to harsh winters, heavy snowfall, strong winds and frequent avalanches, with generally disastrous consequences, sometimes even blocking the Chandrabhaga River. Most of the area in this mountainous terrain is covered by forest, with only small and widely separated habitation patches, where not only is the topography very steep, but the land is sterile and unsuitable for agriculture. Under such constraints, the villages are located on both sides of the Chandrabhaga; the locations afford at least a reasonable sustainability for men and animals. One may occasionally find a small, solitary diminutive dwelling amidst a small cultivable patch. The simple reason for that lonesome condition is that there is not enough arable land available to support another household. Therefore, even under the most propitious condition, the number of houses, which generally are of a very small size, does not generally exceed fifteen in one locality.

The number of houses may be more on the uneven tableland at the bottom of the valley, but on the unyielding slopes and spurs, where subsistence is difficult, the number is much less; only around ten. Each village is located on a sunny terrace nearer the water source, where the villagers have their agricultural holdings stretched over narrow and terraced fields. A habitation site must free from the common risk of rolling rocks

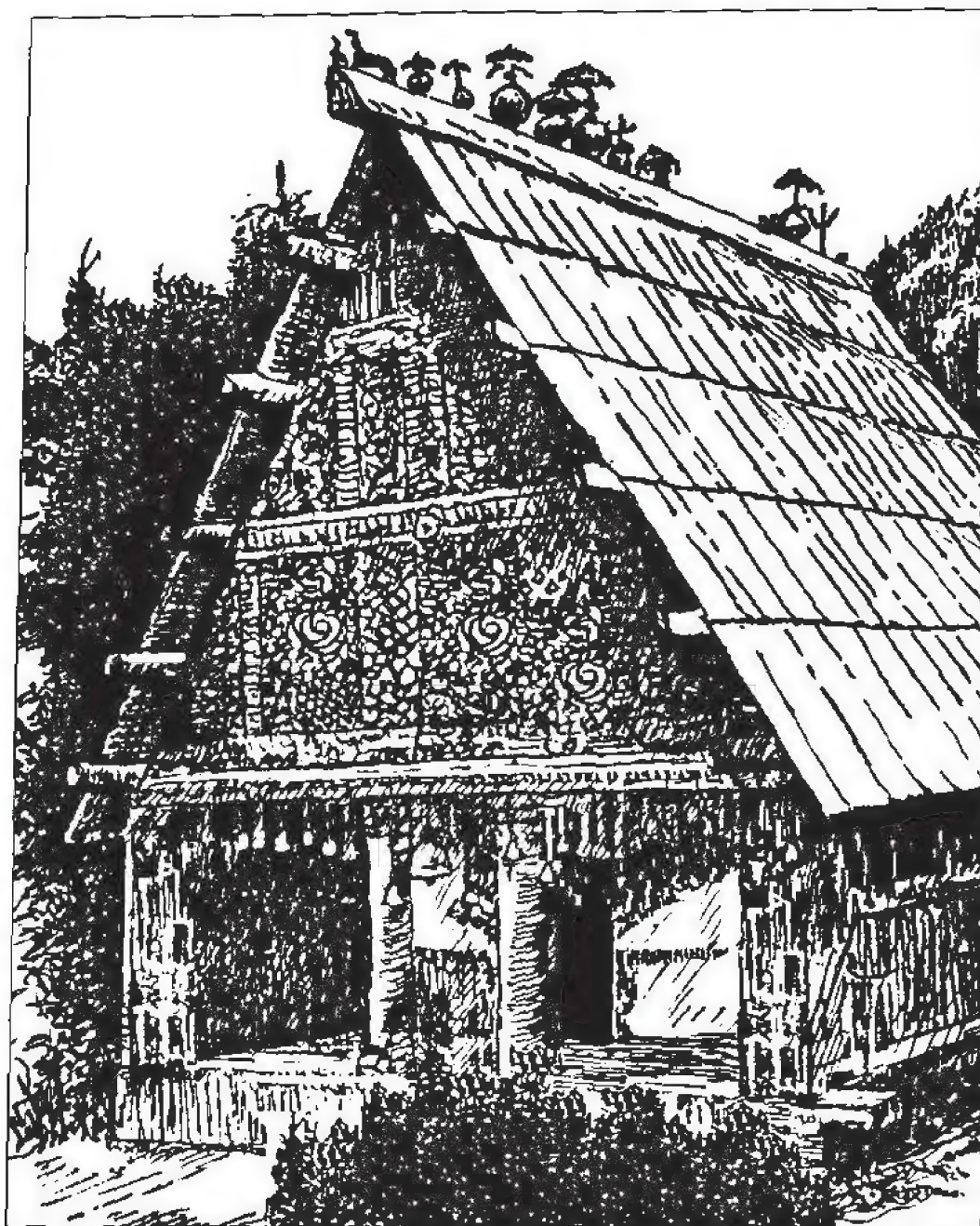


Fig. 3.10: The wooden temple of Dehant Nag at Kilar

and sliding avalanches. Therefore, most of the villages are located on the outer folds of the mountain slopes, where such risks are minimal, and sunshine hours are longer.

Under such formidable conditions, one can hardly think of a systematic layout pattern of the houses. Most of the houses are scattered on different terraces, interspersed by fields and forests. Most of the houses face east or south for maximum sunlight and

warmth. To study the housing style of the Pangi Valley, a typical house at Thamoh, one of the *patti* in Village Kilar was selected.

The houses in Pangi Valley are generally double storeyed, with a single large multipurpose room on each floor. In this room, the food is cooked and the family lives. This room also serves as a store for grains. However, besides this multipurpose room, additional accommodation is provided on the ground floor for the livestock. Generally, separate enclosures are made for sheep and cows. Under this arrangement, the functional floor area on the ground floor (called *koth*) and the first floor, called *mahala* or *bukhari*, differs considerably. The floor area on the ground floor, which includes the area for the livestock, is much larger than on the first floor. In some houses, such arrangement has been made in a very thoughtless manner: the outer structural walls of the ground floor have not been raised to support the roof of the first floor, but independent walls (without bases) to support the heavy mud roof have been built on the first floor. Thus, the walls on both the floors are incongruous. To support the base-less load-bearing walls of the first floor, wooden props have been provided on the ground floor. By that arrangement, a sufficiently open terrace is available around the living room on the first floor, but the safety of such a structure is questionable.

However, in most cases, the load-bearing walls have been taken up to a full two storeyed height. To create an additional accommodation on the ground floor, more load-bearing walls have been built. The roof of such an additional ground floor accommodation serves as a terrace on the first floor. Since the houses are built along the contour across the mountain slope, both the floors are accessible independently, at different levels of the ground slope. Thus, normally no staircase is provided from the ground to the upper floor, and if need be, flagstones are laid on steps along the mountain slope on one side of the building to serve the purpose. In certain cases, internal access is also provided from the ground to the first floor. For that purpose, a sturdy notched log is placed against the wall. One is supposed to climb up the notches to the first floor through an opening on the upper floor, usually without a trapdoor. Such a notched ladder is also kept handy during winters to climb up on the roof to remove piled snow with an improvised wooden shovel (*phaula*), lest the roofs cave in under the weight of the snow. In fact, that is the only outside job that the Pangwals do during winter, otherwise most of the time is spent dozing and relaxing.

The ground floor (*koth*) is essentially meant for tethering livestock and storage while the family lives in the multipurpose living room on the first floor, but the Pangwals

do not stick to that arrangement for the whole year. They live on the first floor only for the brief summer. To protect themselves from the harsh winter, the family shifts to the ground floor and live symbiotically in a single room accommodation with their livestock. The body heat of animals and the central cooking place (*udhan*) keeps the family warm against the freezing winter, which is unduly long in this terrain. However, the family moves to the first floor when summer sets in, leaving the ground floor for penning, but at that time only a few cattle remain there, for most of them are sent for pasturing. In order to create more space for tethering cattle, a separate barn is also improvised on the side of the *koth*, at some distance. That enclosure is known as the *gawail* or *aghal*.

The interior of Pangwal houses is poorly lit and stuffy. That is more so on the ground floor, where the cattle and family live together in a room filled with a foul smell. Only the entrance door (called *sinkhole*) and a small pigeonhole-like ventilator fitted with iron gratings are there for light and fresh air. Since there is no separate kitchen in a one-room Pangwal house, cooking is done on the fireplace made in the middle of that room. For that purpose, about 1 m² square and 15 cm high edged platform is made. On that platform, an iron tripod (called *udhan* or *trainwan*) is placed to serve as a cooking stand. Under the *udhan*, firewood is inserted from all sides. Such improvisation not only serves to cook food, but it also keeps the entire room warm and dimly lit. Customarily, people have been using splinters of resinous wood (called *jagani*) for lighting, but with the opening of this area to the outside world, now kerosene is also available.

The Pangwals locally arrange most of the material, such as stone, wood and birch-bark (*bhojpatra*), *kangasi* grass, and so on, required for constructing a house. This work is done through reciprocal community participation (*dar*). To start with, the village elders select the site for the building, followed by a brief ceremony before digging the foundation (*manyad rakhana*). The foundation (*manyad*) is taken to a depth of about a metre. After hand filling the foundation to about 30 cm above the surrounding ground level, masonry work in the superstructure is begun. Locally available stones are dry-laid for making walls, which generally are about 30 cm thick. As the work on the superstructure progresses, the doorframes are placed where required and the wooden beehives fixed at appropriate places in the walls.

To make a beehive, a piece of a tree trunk is thoroughly hollowed by scooping. This hollowed piece is placed in the wall with its outer side projecting from the wall.

The projected outer end of that hollowed trunk is closed with a wooden plank, leaving a small hole for the entry and exit of bees. The inner end is completely closed with a plank and plastered, only to be disengaged for obtaining honey.

After the walls have been raised to the roof height of the ground floor, *nias*, that is, a wooden wall plate is placed on the four-walls. Placing of *nias*, that is, *dar lagana* is a special occasion, when the owner may sacrifice a ram and host a feast for the villagers. After the *nias* has been ritually placed, the roofing of the ground storey is done. Wooden joists are laid across the *nias* on the walls. Over the joists, thin and coarse wooden planks (called *fat*) are laid, followed by a layer of *kangasi* grass. Over that, birch-bark sheets (*bhojpatra*) lining is provided. Finally, a 15 cm thick layer of compact clay is spread and rammed. Thus, one storey of the Pangwal house is complete. The same process is repeated for the upper storey also. The height of each storey generally remains about 2 m, but the height of the first floor is normally more than that of the ground floor.

By way of finishing, the walls are plastered with mud on both sides. When the plaster dries, whitewashing is done, for which white clay (*makol*) is locally available.

Completion of a house is marked by a sumptuous housewarming feast, dancing and singing. This ceremony is known as *badhaie manana*. On this occasion, a ram is sacrificed and the cooking place (*udhan*) is consecrated by sprinkling the blood of the slaughtered ram.

THE CHURAH DOMESTIC ARCHITECTURE

The author entered Pangi Valley after crossing the Sach Pass, but for his return journey, he followed another route through the Chaini Pass (4385 m above mean sea level). On the southern slopes of this pass, is the Churah tehsil of Chamba District. The inhabitants of this tehsil, after its name, are known as the Churahis. Devi Kothi, situated some 30 km northeast of Tissa, the headquarters of this tehsil, is the most famous and ancient village of this area.

Until a few years back, one had to trek to Devi Kothi from Tissa on the perilous track, but now one can drive a part of that distance on a fair-weather road, and trek upslope for a few kilometres more to reach the village. This village lies in the monsoonal temperate zone, where the climate remains pleasantly warm in summer, but severely cold during winters, when it snows heavily, forcing the people to stay indoors. Devi

Kothi is a sizable village of about ninety houses, of which about sixty are old, built in the local vernacular style, and the remaining are 'modern', constructed by immigrant labour using imported material. The layout pattern of these modern houses is also non-traditional.

In this mountainous region, most of the land is covered with dense forests. The steep and rocky stretches are *not only unsuitable for habitation*, but also difficult for cultivation. Therefore, the hamlets and villages are located widely apart wherever small arable stretches are available to support living. Thus, depending upon the quality of land, a lonely house may be seen standing amidst a small patch of terraced fields, and a cluster of a few houses at a more convenient location. Generally, the size of the village is larger at the bottom of the valleys, where large enough arable stretches are available, but that is not the only criteria for selection of a habitation site; safety from falling rocks and avalanches is far more important. The locals still remember the devastation of the entire village of Tissa by a massive landslide around the mid-nineteenth century, after which the site got converted into forestland. Such landslides have been very frequent on the way to Devi Kothi. During the author's first visit to this village in about 1961, he was trapped in one such deadly and glaciated landslide on his way back to Tissa. Probably, because of this reason, the Devi Kothi Village was settled at three different places, deliberately spaced apart from each other. Those three localities: (1) Dhariala, (2) Loharaka and (3) Devi Kothi are the three hamlets of the revenue village, Devi Kothi. Of these, Devi Kothi is the largest – a house in this village was selected for the case study of the Churahi housing pattern.

Unlike the double storeyed houses in the Pangri Valley across the Chaini Pass, most of the houses in Churahi are single storey structures. In some houses, a basement may also be found, but that is mostly used for non-residential purposes, mainly as a store for sundry items. The houses are so built along the natural contours that the mud roofs of the houses on the lower terrace serve as a courtyard to the houses on the upper terrace. These roofs not only provide passages to the different houses, but because of the non-availability of flat land around, people use these overhead terraces for threshing and drying of grains as well. Thus, should one look at this village from a higher distant location, he would only find the bald and flattened terraces of a mountain profile. However, when seen from the valley side, the houses may appear to be well-defined rectangular caves, piled one above the other on different terraces. Devi Kothi is one such 'hidden' village of the area.

People of both high and low castes, and even a sprinkling of Muslims, live in this village, together at one place in complete harmony. In fact, under natural hardships, class or religion-based distinctions are almost invisible in this village. A feeling of camaraderie and solidarity becomes manifest during reciprocal community participation, in which people of all castes and religion participate at the same time. However, when the host happens to be of a lower caste or a Muslim, the duty of preparing food for the participants is entrusted to a person of a higher caste. Interestingly, while the traditional residential houses are box-like flat structures, the Chamunda Devi temple in the village has a high-pitched gabled roof with fine slate roofing. This temple also has some interesting woodcarvings and life-size anthropomorphic wooden images.

A Churahi house is a simple affair. Usually a site is levelled by partially cutting and then filling the mountain slope. If the site conditions permit, basement accommodation may be created on the valley side for sundry use. On the level ground, the house is laid out in a quadratic layout, covering an area of about 6.00 x 5.50 m. The foundation (*khai* or *maniyad*) is dug to a depth of 90 cm and filled with locally available stones up to the ground level. Over that substructure, dry-stone masonry work of the four walls is taken up. Walls are erected on three sides and the front is kept open (Figure 3.11). Sometimes, wood-and-stone pillars replace solid front walls. These are built, one on

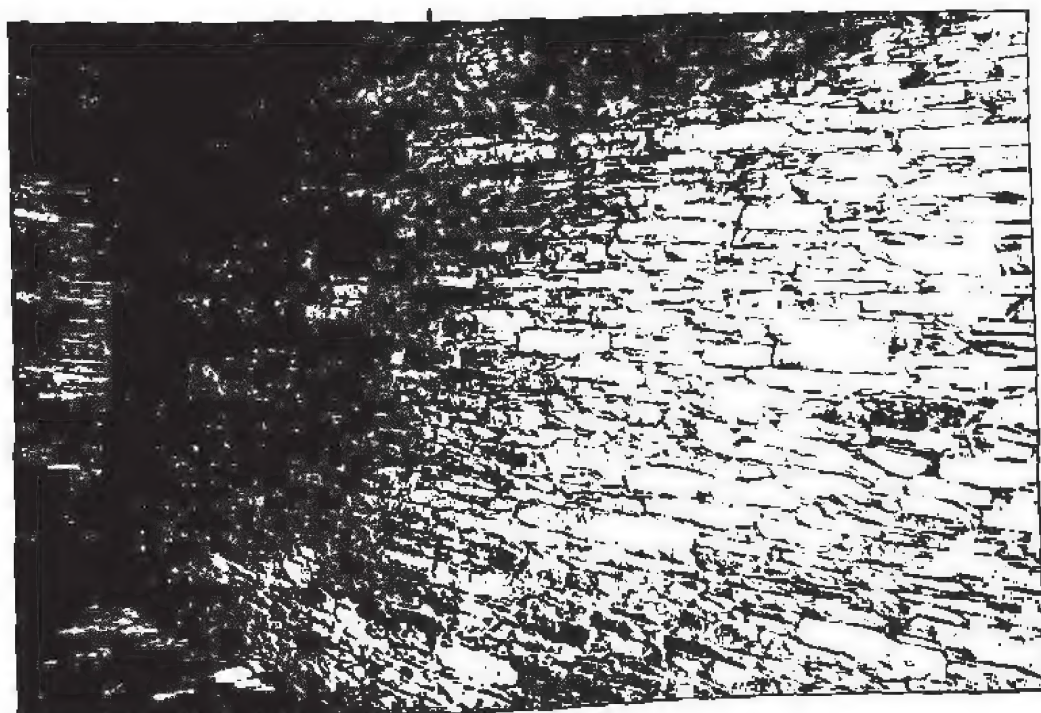


Fig. 3.11: Dry masonry wall of schist stone

each side at the outer edge. Such pillars are known as *thola*. The gap so left is covered with wooden planking. Sometimes, a large shelved space (*gharyani*) is provided to keep water pots, utensils and other household items.

To construct dry-stone masonry walls with the locally available schist stone, sturdy wooden frames are placed at the height of every 1 m of stone masonry. To make the wooden frames, roughly hewn sturdy logs are placed on both sides of the wall, with wooden binders in between, at intervals, so that the frame is structurally a single piece and strong enough to withstand the superimposed load and transmit that uniformly to the foundation. The height of the four walls is normally kept between 2.70 m to 3.00 m. This type of wall construction is locally known as the *chanai kandh*. In the Kullu area, such wall construction is known as the *dbol-maide*. The large room built in this manner is the multipurpose one-room Churahi house, which serves as the sleeping room, sitting room, kitchen and a pen for milch cattle; besides the guests are also accommodated in this. However, the functional areas within this room are demarcated with wooden partition walls. Since wood is easily available in this area and people use it freely.

To create different functional areas, a space of about 2 m is earmarked in the front part for the fronting veranda (*beeh*) and a box room (*kboren*) by thick wooden partition walls, fitted in the framework of sturdy posts (*tham*) and beams (*nas*) of the floor and roof. The entrance to the house is provided from one side through the veranda (Figure 3.12). Care is taken to keep the entrance to the east or west, but never in the front or back. In any case, entrance towards the north or the south is regarded inauspicious.

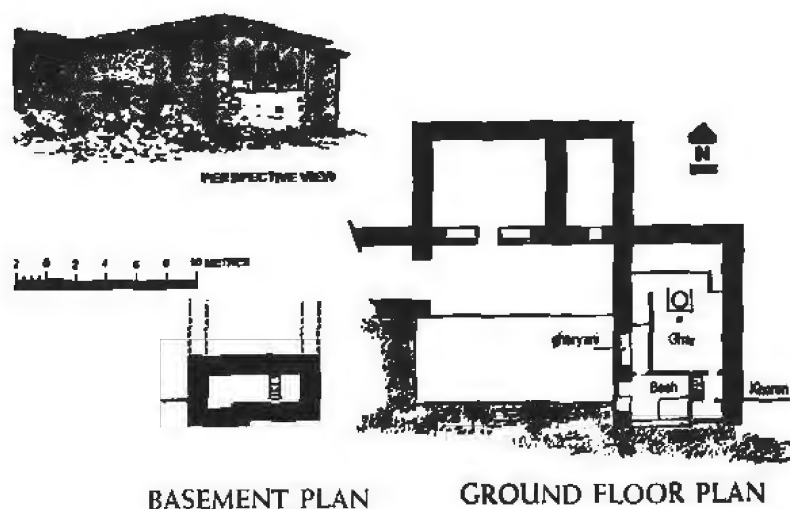


Fig. 3.12: A typical house at Devi Kotbi

On the other side, opposite to the entrance, a hand loom is permanently installed. The façade of the veranda has a wooden railing between the sturdy deodar wood posts, with the wooden panels formed into cusped arches. The wooden structural elements in that portion: posts, railings, arched panels, and so on, are normally carved. One side of the veranda, behind the hand loom, is earmarked as the box room (by providing a wooden partition). The *khoren* is completely enclosed with wooden planks on all sides, but access to that room is provided from the multipurpose living room (*ghar*) on the back. From the *khoren*, a trapdoor is provided to get down to the basement lumber room. No opening, except a small pigeonhole, is provided in the basement cellar.

From the other side of the veranda, closer to the main entrance, a metre-wide passage is earmarked by the wooden partition to the *ghar* along the *gharyani*. The *ghar* is virtually closed from all sides, with no inlet for fresh air or light from outside. However, an escape for smoke (*ougoon*) is provided through a vent on the roof. A small opening (*chhai*) is also provided in the wooden wall to admit light and air.

In the *ghar*, the area for penning cattle is provided along the walls by a sort of jungle wood barricading, fixed between sturdy posts. The penning area is known as the *guala*. Those posts also support the roof beams, spanned across the walls. If required, wooden posts are also erected at different places in the *ghar* to ensure that the heavy dead-load and live-load on the mud roof are well-supported. Over the *guala*, a sturdy wooden loft is provided for storing blankets and other household items. The rest of the open space of the *ghar* is the living area for the family. In the middle of this area, a cooking place is provided. No formal hearth is made, but a sturdy iron tripod is placed over a raised platform, similar to the one noted in a Pangwal house. Since fuel wood is amply available from the jungle, the fire under the tripod always keeps smouldering. During the night, people sleep around the central fire that keeps the interiors warm. With no direct opening to the outside and the smouldering fire in the *ghar*, people can sleep comfortably on the wooden floor (*bhatt*) only with light bedding even during the chill of winter, when metres of snow pile up outside.

To lay the flat earthen roof, sturdy wooden beams are fixed on the walls and the heavy wooden posts erected at appropriate places in the *ghar*, *khoren*, *beeh*, and so on. Over the beams, joists are laid, followed by about 4 cm thick wooden ceiling planks (*shan*). That completes the under-structure of the roof. The birch-bark sheet (*bhojpatra*) lining is spread over the *shan*, followed by a well-beaten layer of pine needles or ferns. Over that, about 15 cm of thick moist clay is spread and compacted by ramming,

followed by a topping of cow dung solution, which is occasionally repeated to keep the roof terrace in good repair.

Interestingly, the Churahis feel comfortable in a compact multipurpose *ghar*, and they prefer to live there, even if they have extra accommodation. They prefer to use that 'surplus' built up space for storing fuel and fodder for the winter and to tether their cattle.

To finish the house, the walls are plastered with the mud and cow-dung *gara*. Whitewashing is almost unknown here, but the *shan* may be whitewashed in patches and hand impressions may occasionally be daubed on the walls with the *makol* or mud and cow dung solution. However, on ceremonial occasions, the womenfolk execute linear decorations on the walls, doors, and so on. The decorative devices are: *ghorai* (hooked lines in various combinations with black dots); *khurtar* (small spots drawn or carved on the wooden posts); *nag bel* (a zigzag line with phyllomorphic forms on the kinks); *dori* (a floral band); *kutheri phul* (a stylised geometric device); and *chhai kutheri phul* (a small opening in the wall in the form of a stylised geometric figure) and so on.

THE KHASHA DOMESTIC ARCHITECTURE

The Khasha domestic architecture in this region forms a class by itself because of its distinctive ethnic character. Geo-climatic and biophysical diversities notwithstanding, the essential features of the Khasha house-types have remained unchanged till date. Characteristically identical features of Khasha architecture are found to repeatedly occur in Khasha houses located in differing terrain and valley areas, in entirely different geo-physical settings. Thus, the Khash houses in Giri-par or Jaunsar area of the sub-mountainous region, (which have been discussed in Chapter 2) differ only in detail, from their counterparts in the mid-Himalayan region. The broad features of the Khasha houses remain uniformly the same, namely, the same construction material – wood, the similar façade – the multi-storeyed trabeated elevation, and a similar layout pattern – a linear layout. The reason for that uniformity may not be far to seek: the Khasha were originally one of the highlander people of the Himalayas, belonging to the wood-and-wool culture. Those ethnic traits have remained intact in their traditional lifestyle. Thus, their houses have been wood-based, and they have remained intimately attached to their flocks of goats and sheep, following a mixed agro-pastoral routine. The ground floor or the basement of their houses is exclusively meant for the flocks. When a household

has too large a flock to accommodate in the same house, the large penning enclosures, duly fenced against wild predators, are erected close by. Such independent enclosures for the flock are known as *chhan* in the Mandi-Kullu area. Sometimes, the sheep and goats may also be found huddled in the natural caves found at many places near the village, in the interior, where there is proper security for flocks. Such a natural penning shelter is known as the *dwar*. Before the typical Khasha houses in the mid-Himalayan region are studied, it may be useful to outline the salient features of these houses:

- (1) As in the Village Osan, a slate-paved open threshing yard, called *khwala* or *kbalyan*, is an essential part of a house in the entire mid-Himalayan zone, with only a very few exceptions. This threshing yard is normally circular in shape, rimmed by a parapet wall, topped with flagstone slabs or slates, so that nothing unwanted drops in from the sides. The floor of *khwala* and the inner side of the parapet wall are coated occasionally with cow dung solution, so that the gaps between the stones are properly plugged. The *khwala* is a multipurpose open area, in which, besides threshing grains, innumerable household chores are performed. Besides, grains and clothes are spread there for drying, and people spend most of their leisure hours sitting and gossiping on the parapets. The *khwala* is a most convenient open space in front of the house, where people can occasionally congregate for community dancing, singing and feasting, and so on. The author came across a unique supplementary use of the *khwala* in Nirmand area in the outer Saraj of Kullu District in the course of his fieldwork. During summers, when the *khwala* normally remain vacant, the women put seeds of okra in the gaps between the flagstones of the floor. Nourished by decomposed dung in the gaps, the okra plants grow to stupendous heights of more than 2 m, with bumper crops of the tender and dark green okra (*bhindi*) pods, as large as 30 cm. Such use of the *khwala* has not been seen elsewhere by the author.
- (2) The Khasha houses as a rule are multi-storeyed structures. While in the Giripar or Jaunsar areas, in the sub-mountainous regions, most of the houses are double storeyed structures, these are largely two-and-a-half or three-storeyed in the mid-Himalayan zone. The paucity of adequate land for the horizontal expansion of houses in the mountainous interiors is one apparent reason for such peculiarity. However, perhaps more than that, the urgency for keeping the flocks well-guarded and secure in close proximity, and the imperatives of the traditional joint family system may be more compelling factors.

- (3) The geophysical reason for the double storey (and occasionally three storey also) may be that the ground profile though steep, can be developed with some effort, to build a house. Therefore, the people, when in need of more accommodation, prefer building independent two-floor houses rather than raising the existing house to add more floors for the fear that the multi-storeyed structure may exert more dead weight on the timber-bonded heavy stone masonry walls and pose a danger to the stability of the structure. It is for this reason that the double or two-and-a-half storeyed house is generally preferred. Such houses, built in the linear layout on different terraces along the contour, give a clustered appearance.
- (4) The ground floor is earmarked exclusively for the goats and sheep; the cows and buffalos are tethered separately. For that reason, the height of the ground floor is restricted to about one metre. In some houses, an entresol or mezzanine – an intermediate floor between the ground and the first floors – is also provided. It is known as *pand* in the vernacular parlance. The height of this floor also remains the same as that of the floor below it. Entry to this floor is provided through a ventilator-like door from the outside. This floor is used for fodder and firewood storage. However, when a part of the *pand* is used for a box room, no door is provided from outside, but a trapdoor from the first floor room is provided to enter this area. In some places, the family also retires into the *pand* during the winter.
- (5) In fact, the traditional joint family system, which has necessitated that all family members live under one roof for the smooth and snug management of the household, a multi-storeyed compact house has been a better option than the linearly extended one. Moreover, a bigger household has traditionally been a status symbol, and regarded as an indicator of prosperity in the Khasha social system. Because, more working hands are available in such a household, it means diversification of duties within one family, whereby different brothers can perform different professional jobs. Thus, one can be a shepherd, one a tailor, the other an artisan and so on. Such household is known as *bad-tabari*, that is, a large household, among the Khashas in the Mandi-Kullu area.
- (6) However, under the changed socio-cultural scenario, with the breaking up of the joint family system and the statutory restriction on traditional pasturing rights,

sheep and goat rearing is now losing its popularity. Consequently, new houses are not only smaller in size, but they have also done away with the accommodation for goats and sheep. On the other hand, people are now increasingly going in for dairy farming. Dairy cattle are mostly kept in the separate enclosure nearby, but in a few cases, they are accommodated in the ground floor, if, of sufficient height (of about 2 m).

- (7) Moreover, in the post-Independence decades, horticulture has gained precedence over other vocations in the entire Khasha dominated area, which, though not suitable for traditional rain-based agriculture, is most suited for the cultivation of off-season vegetables, seed potato, apple, and so on. All these cash crops have not only ushered in prosperity in the Khasha belt, but these have completely transformed the traditional way of living. The ground floor is no longer a byre for the livestock in many 'modern' Khasha houses, but is now used for potato and apple storage.
- (8) The kitchen is usually on the top floor or attic floor under the roof. In the centre of the kitchen, a large and sturdy slate stone is placed. Over it, a thick layer of well-rammed earth, with raised edge-lines, is provided, over which the hearth is made, with multiple cooking stands. While cooking is done on the main stand, the other stands are used to keep the food warm or to heat water. The hearth is always kept smouldering even in idle conditions and it can be activated by slight agitation of the coals. An opening is left on the roof exactly over the cooking platform for the smoke to escape. Not only is this hearth used to cook food, but it also keeps the interior warm for the family to huddle around.
- (9) The upper floors are used as the living area. On these floors, usually deep overhanging verandas are provided on all sides. From the front verandas, access is provided to the rooms behind. These verandas are the most used part of the house, where not only different daytime household chores are attended to, but also where members of the family congregate, work, sit, relax and doze. The verandas also serve as secure areas for spreading and drying grains.

Usually these verandas are kept open, and are even without a railing. However, in the well-to-do households, these verandas are provided with ornamental railing-panels or balusters in between fluted or tapered posts. Between these posts, floral cusped arches are also provided. Sometimes, vertical planks are fixed between the posts to

cover the veranda completely. To admit air and light into the interiors, small openings are left in the planks. Generally the rooms behind the veranda, accessed through the small doors, are dimly lit and inadequately ventilated by narrow ventilators. In the higher altitude locations of Shimla and Kinnaur districts, such cantilevered verandas are enclosed partly or totally on all sides to insulate the interiors from the icy winds. A large stone slab or thick slate may be seen placed in the back veranda. That platform serves as a bathing place. This area can be kept open or enclosed.

With these common features of the Khasha residential houses delineated, three typical houses will be studied. For this purpose, three traditional Khasha houses were selected, belonging to three different economic categories. One of these is situated at Village Shathla, in one of the best developed apple-rich belts of Kotgarh area in tehsil Kumharsain of Shimla District. This area witnessed socio-economic resurgence under the sagacious guidance of an American missionary Revd Samuel Evans Stokes in the second decade of the last century, much before India attained independence from the British rule. Therefore, the people of Kotgarh area were not only pioneers in apple cultivation, but were also among the pioneering crusaders against the *begar* system in the Shimla Hills, which S.E. Stokes spearheaded. Later, he married a low-caste local woman and embraced Hinduism as Satyanand Stokes. He joined the national mainstream as one of the leading social reformists and nationalist leaders. The impact of new awakening and the horticulture-based economic prosperity is evident from the striking changes, improvements and functional modifications in Khasha traditional dwellings.

At the other end is the traditional Khasha house in the interiors of Chuhara Valley at Village Chirgaon, situated at an angle of the rivers Pabar and Andhra. In that interior terrain of the Rohru area, the traditional way of living centred round the local deities, still prevails. The houses in that valley are not pompous, but wood-based modest structures of agro-pastoral folks.

In between those two extremes, the architecture of residential houses in the Kotkhai area presents a harmonious blend of the two. The typical house at Village Purag in the Kotkhai tehsil strikes a compromise between the architecture of houses at Village Shathla and the one at Chirgaon. In it, the traditional and modern features are fused to evolve a quintessential form of the modern rural Khasha architecture. Kotkhai area also lies in the apple belt, where potato has been the other traditional cash crop. Economic prosperity notwithstanding, the houses of the Kotkhai area still have their

traditional functional parameters almost intact, for socio-economic awakening came to the area much after Independence.

Pattern of Khasha Houses at Village Shathla

Scattered over the mountain ledge, sloping down to the bank of Satluj in the valley, Shathla is an apple-growers' village in the Kotgarh area situated at a commanding height of about 2200 m above mean sea level. The houses, set in small clusters on the terraced slopes amidst the apple orchards, add variety to the greenery that pervades the mountainous landscape. Because of the prosperity and exposure to a modern living style ushered in by apple cultivation in this area, the traditional formal and functional aspects of residential houses have undergone complete transformation in the post-Independence decades. How the village setting and the houses in the Kotgarh area looked prior to the introduction of apple cultivation in this area may be best known from what Major Sir William Lloyd and Captain Alexander Gerard observed in their notes (Lloyd and Gerard 1840: 168-171) dated 21 May 1822. They record:

The broad flanks and the curious flat summits of some of the mountains, wherever there is sufficient soil, are cultivated with an industry which is almost incredible. The fields on the slopes are, as I have already mentioned, long, narrow strips of ground, which rise one above another like terraces to great elevations, even upon very steep declivities. The supporting wall of each is two, three, four, five, or six feet in height, according to the abruptness of the place. They are levelled with great care, and are watered by rills conducted sometimes from a considerable distance. They generally run from the highest, and overflow every part successively to the lowest. The effect of aspect and elevation upon the cultivation is very remarkable, for while on the uplands the produce is green, it has been reaped and carried at the base of the valley. Indeed this is extraordinarily exemplified in two gardens, which Captain P. Gerard has at Koteghur, one of which is near the house where he resides, and the other in the dell, 4000 feet below. In the lower one plantains and other tropical fruits are abundant while in the upper English fruits are equally plentiful.

The Hamlets are seldom of more than ten or fifteen houses, generally not so many. Single houses are numerous, and from their being scattered amongst the fields give an agreeable variety to the bold landscape. In those districts, which border the plains, the dwellings, which are mere huts, have flat roofs; but here, where it always snows during the winters, the roofs made either of cedar also called Deodar, or of slates, are pent. They are of two

or three stories, the lowest of which is invariably used for cattle, and when there are three, the second for the grains, and the third, occupied by the family, is surrounded by a covered gallery, in which its inhabitants are generally seen sitting at leisure. All the temples, and many also of the larger houses, have roofs after the Chinese fashion, which gives them a singular and pleasing appearance. The pitch of these roofs is very great, being formed by the disposition of planks into two concave curves, joined at the summit, and diverging down to the walls, where they project horizontally three or four feet into eaves. The walls are of wood or stone, sometimes both, and the buildings are very substantial.

Now, almost two centuries later, the scenario is considerably changed. There are no more agricultural fields and thick forests in the area, but rolling orchards down to the middle of the mountain slope, with thinned deodar forests on the margin. At the floor of the valley, the people have maintained fertile and wet paddy fields, the *kyar*. With the apple boom, the functional parameters of houses have significantly changed. The main concentration of houses is in the village proper, where these have traditionally existed. However, people have lately been settling at sites around their orchards, where they have built their new houses with modern amenities. Thus, a marked difference is evident between the old traditional houses in the village and the new, 'modern' houses in the peripheral localities. The difference between the old and the new notwithstanding, houses at Shathla and elsewhere in Kotgarh and surrounding areas, are without exception multi-storeyed and pompous.

Prior to the restriction on felling of trees, good quality deodar wood was plentifully available from the local deodar forests to the people in the Shimla Hills on customary *bartandari* (right-holder) rates. Therefore, they used deodar wood lavishly in their houses. Thus, most of the houses at Shathla, as elsewhere in the adjoining areas are beautiful multi-storeyed structures with immaculately built deodar wood bonded wood-and-stone (*katth-kuni*) walls. Most of the houses in the village are laid out in a quadratic formation, with main rooms arranged in a linear formation in the front and a large oblong room behind them. However, the structural wall for the back room is built only for the ground floor. For the above floors, the back rooms are only made with the framed and battened wooden outer wall and intermediate wooden partitions. On each of the upper floors, a wide projected veranda is provided in the front and on the sides, but no veranda is provided at the back. The oblong backroom on each floor is used in various ways by the household according to its own need, but it is usually converted into smaller rooms by wooden partitions.

A part of that oblong back room, made of structural walls, on the ground floor is used as a barn (*kbud*) for the high-yielding hybrid milch cattle, and used as a hay store and servant quarter. The main rooms on the ground floor are used for storage and as packing space for the cash crops – apple, potato, and so on. In some cases, even the entire ground floor is used as a storage area and a separate shed is made for the cattle. That entire functional arrangement of the ground floor is strikingly at variance with the traditional usage: herding goats and sheep or tethering cattle. From one of the side verandas, a single-flight wooden ladder is provided with a trapdoor for access to the upper floors.

The first floor is the structural replication of the ground floor, but with an additional projecting veranda on three sides. However, there are certain significant functional changes on this floor: the main rooms are used for living, but one of them closest to the staircase is earmarked as a drawing room for receiving guests. The oblong area at the back may be retained as one large hall-like room or made into several rooms by providing wooden partitions, as per individual needs. The rear ends of the side verandas are meant for a toilet and bathroom, for which wooden partitions are provided. Of late, people are increasingly converting the old dry-bathrooms into proper toilets and baths equipped with modern sanitary fittings. As usual, these verandas are the most important functional areas of the house, wherein the people spend most of their waking hours. In fact, relaxing in the sunbathed open verandas of these houses, overlooking the endless vista of natural splendour during the time of apple blossom is one of the most exhilarating experiences for anyone to witness.

Only the structural load-bearing *kath-kuni* walls of the main rooms are taken up to make the third floor. That third floor is technically an attic floor, locally known as the *darak*. The *darak* is essentially the kitchen floor, wherein food is prepared and grains are stored. The additional space, if available, may also be converted into dining and living rooms. Keeping the kitchen on the highest floor is very advantageous, for it not only keeps the rest of the house smoke-free, but also ensures privacy of the household. Since fuel wood is amply available in the area, people still use it in their conventional hearths. However, in some houses, cooking gas may also be found.

Generally, the rooms are sufficiently spacious and airy, with many windows in each room. Rooms are generally interconnected by the doors. In most of the houses in the village, the doors and windows are fitted with glass panes and lavishly painted and varnished according to the latest fashion. The height of each floor is kept at around

2.75 m. While the flooring of the ground floor is generally made of rammed earth or flagstones, the floors of the upper storeys are all wooden. For laying the wooden floor, the beams and joists are spanned across the rooms on the side walls. The flooring of the veranda is also done in a similar manner. The square-cut veranda posts are made of sturdy deodar wood, which are left mostly plain. In fact, wood has been used profusely in the houses in this area, but emphasis has only been on the structural and functional aspects. For this reason, one does not find any artistic use of wood in any of the old or new houses in this area. Possibly, overemphasis on modernisation has made the people indifferent towards the traditional values of beauty and aesthetics.

Traditionally, slate has been the staple roof-covering material, but for laying slate roofing, large quantities of wood are required. Due to scarcity of wood, people are increasingly opting for CGI sheets for roofing, as they consume much less wood. While the veranda and back rooms are covered with the lean-to roof, the main rooms are covered with high-pitched hipped roofing. This type of roofing gives a pleasing multi-tiered effect, which blends very well with the surroundings.

In most of the traditional houses, the front courtyard (*khalyan*) is still provided for threshing grains. On the side of each *khalyan*, there is a small-prefabricated wooden cabin, locally known as the *kharooori*, possibly a local version of *tand* of Uttarkashi District of Uttarakhand, which has been noted elsewhere in the text. That *kharooori* serves as the husk store, besides, agricultural implements are also kept in it. Many *khalyan* have now become dysfunctional under the changed circumstances, and these may now be found being used for tethering cattle.

A Traditional Khasha House in Chuhara Valley

Located in the head reaches of Pabar Valley of Rohru area, at the angle where Andhra River pours into the Pabar, Chergaon is a remote and sleepy traditional Khasha Village, though it is now the headquarters of the tehsil of that name. The Pabar Valley in its head reaches is popularly known as the Chuhara Valley, recognised for its fertile terraced wet paddy fields, dense deodar forests and ferocious local gods and goddesses. Although the village is connected with an all-weather road, the safety of the vehicles and travellers always remains at the mercy of the unpredictable weather and the capricious local gods in that terrain. Some years back, a cloudburst in the Andhra Basin washed away the entire lower township of Chergaon where the village shops, government offices and quarters were located, causing colossal loss of life and property. The locals attributed

that deluge to the displeasure of *Jabbal Devta*, the presiding god of the Andhra Basin. However, the old Chergaon Village, located higher up on the solid rocky strata, escaped that devastation.

The old Chergaon is a multi-community village, inhabited by the Thakurs (perhaps the descendants of the ancient Mawana, the traditional strongmen of the clan), Koli, Lohar, Baddhi, and others. The mainstay of the people is agriculture besides goat and sheep herding, but the Lohar and Baddhi are hereditary skilled artisans. They additionally cater to different requirements of the villagers following the traditional barter system. People of different communities live together, without any apparent class distinction. The houses in the village do not conform to any formal order. Most of these have been built haphazardly at different levels in a confused clustered formation, with winding and filthy paths and bypaths running between the houses. Of late, a few houses may be seen built in a scattered manner at isolated locations on the fringes of this village.

The houses in the Chuhara Valley are generally simple quadratic structures, which look far taller in their covered area, accentuated further by the high-pitched hipped roof. Since good quality structural timber has been plentifully available to the people at the customary nominal *zamindari* rates from the neighbouring deodar (*diar*) forests for building their own houses, people have used it extravagantly. Interestingly, woodwork in these traditional Khasha houses is not plain, as is found in the 'modernised' Khasha houses at Shathla, but is carved profusely with stylised and interesting floral, faunal and figural devices. Even the exposed areas of the wooden *cheol* (wall plates) of the timber-bonded stone masonry walls (*kattb-kuni*), which have more of wood than stones, may also be found artistically carved.

All the houses in the village are double storeyed with an additional intermediate floor, called *pand*, between the ground floor and the first floor. Thus, technically these are two-and-half storied structures – a characteristic feature of Khasha domestic architecture. Since the soil strata in this locality are rocky, the foundation of a house does not go deeper than half a metre. The width of the trench is also about 45 cm, that is, the wall thickness of the superstructure. However, people are extremely superstitious about the protection of the foundation. Therefore, it is ensured that no person, even the owner, if afflicted by *Shani* (Saturn) should enter the site demarcated for construction after the foundation has been dug. Constant vigil is kept until the foundation is filled up to ensure that no one puts evil charms in it. People say that once *Jabbal Devta* found some of the old houses afflicted with evil charms and, when those 'houses of evil' were

pulled down, the charms, containing hair, nails and ash, were found wrapped in a red cloth. Therefore, people keep watch over the entire process of construction until the house is ritually consecrated to *Jabbal Devta*. Such ceremony involves sacrificing several goats. People are not fastidious about the orientation of the house. The site condition settles that matter in a practical manner. However, the entrance door (*dar*) facing east is considered auspicious (Figure 3.13).

Generally, no plinth is provided. Thus, there is hardly any difference in the level between the ground outside and the floor inside the house at the ground floor. To



Fig. 3.13: An entrance door with traditional auspicious decoration

ensure that the filth from the surrounding area does not spill into the rooms on the ground floor, a raised stone sill (*dehad*) is provided at the entrance door. The ground floor (*goshal*) is exclusively earmarked for domestic animals, sheep, goats and cows. The Khasha rarely keep buffaloes; these are the reserve of the Gujjar. The height of the floor hardly exceeds 1.50 m. Except for the entrance door there is no opening in the *goshal*. The doorframe (*darpaichi*) and shutters (mostly one piece) of the *goshal* are made of thick and sturdy deodar wood. The door is fitted with the traditional ornate latching apparatus (*bichoo*), which the local *lohar* (ironsmith) makes for his clients. The sturdy door and the foolproof locking device ensure protection of livestock from nocturnal wild predators and interlopers.

Above the *goshal* is the *pand*, the secret entresol or mezzanine floor. The height of this floor is normally about 1.25 m. In order to admit air into that floor, small screened ventilators (*mord*) are provided. The *pand* is the typical strong room of the traditional Khasha house. It had been an essential part of Khasha domestic architecture, for until the late Mediaeval times, inter-clan fights had been a common feature of the Khasha social system, in which the rival clans or *khoond* fought and killed each other and plundered their rival's property. To protect their valuables from pillage, they stored them in the *pand*. Although, under the changed circumstances, the *khoond* institution has lost its sanguinary aspect, yet the people have assiduously retained *pand* in their houses. Access to the *pand* is provided from the floor above it through a strategically located trapdoor and a removable notched wooden log (*shairta*). Such a notched log is known as *chapna* in the trans-Himalayan region. During severe winters, when there is snow around, the people also retire to their cosy *pand*.

Above the *pand* is the living floor (*bawad*). Around the *bawad*, there is about a metre-wide cantilevered deck (*tong*) on all sides, supported on sturdy beams (*tolai*); it cannot be termed as veranda, for it neither has the usual railing nor the veranda posts, but simply a wooden floor. However, in some of the well-to-do households, the *tong* is partially or totally covered with panelled wooden framework (*kundai*), with small arcuate openings to admit light and air. On these panels, very interesting woodcarving work is done, adding an aesthetic touch to the façade. Such a closed *tong* is locally known as the *wad*. People use this deck for basking in the sun or for performing petty household chores. The access to that floor is provided directly from the ground by a stepladder (*sangol*) through a trapdoor on the deck.

The rooms on this floor are entered from the cantilevered deck through the narrow doors. For locking it, a sturdy wooden log is fixed across the closed door-shutters by inserting it in the holes made on the jambs; it is locally known as the *khurku*. A modest house may only have a few living rooms, beside a small storage space (*bihad*) between two living rooms. Each room may have a couple of cupboards (*teerai*) and a small iron-grated window (*tiri*). In one of the rooms on this floor, a wooden box is fixed in the wall for bee keeping and is locally known as the *makoti*. One of these rooms may also serve as a kitchen, but usually people have their cooking space on the attic floor (*chhand*) above the *bawad*.

The *chhand* above the *bawad* is used as the kitchen, access to which is provided from one of the rooms on the *bawad* through a portable or fixed stepladder. People also take their meals in the *chhand*. In the kitchen, a cupboard (*bandiyora*) may be earmarked for keeping utensils. Normally, there is no provision for a bathroom and toilet in these houses. A thick flat stone may be placed on the back, in one corner of the *tong* or *wad*, where the women may occasionally take their bath. The men take their bath in the open.

As elsewhere, in this region of the Chuhara Valley, wood is lavishly used in construction of houses. To make the floors, sturdy beams (*brani*) are placed on the walls across room. On these *brani*, thick deodar wooden planks are fitted. The planks are kept exposed, with no other flooring material on them. To make the flooring smooth, the women repeatedly scrub the surface for many days. Thus, the surface always remains fresh and smooth. For roofing, a sturdy wooden substructure, consisting of rafters (*chhoti*), purlins (*karian*) and ridgepole (*lada*), is fabricated over which thick and coarse local slates are nailed, to form a hipped roof (*chhappar*). By way of finishing, the walls are plastered with mud mortar from the inside. When the plaster is dry, a coat of *shukla mata* (local white earth) is given.

Every house in the Chuhara Valley must have an independent storage cabin, known as the *kothar* or *kotba*. It is structurally and functionally similar to the *tand* of Uttarkashi District of Uttarakhand. However, it is a larger cabin, having several compartments (*kothadee*) for storing different types of grains.

A Traditional House at Purag

To study the housing pattern in the Kotkhai area, the author selected the traditional house of his friend, the late Shri Mirjoo Ram at Purag. He had a beautiful traditional

house at a commanding height in the village, overlooking the whole Kotkhai area and the mountain ranges around. That large 'L'-shaped multi-storeyed house was largely made of wood. Even the *katth-kuni* walls of that house were high and had fine deodar wood linings on both sides. Thus, nothing but deodar wood, well-polished to a rich lustre with *chuli* oil, was visible in the house. The author had the opportunity to be his guest in that house for many days. He studied not only the structural, architectural and functional details of that house, but also related those aspects to the socio-cultural environment of the area to find out the relevance of local domestic architecture within the entire living-system. Although the author had studied that house years ago, yet the nostalgic memories of that house were still alive in his mind, and when he revisited that house for this project, he found that beautiful house with its traditional architecture intact, but signs of aging were visible on it.

Purag is a large village sprawling on the mountain saddle with clusters of houses at different levels belonging to various clans and castes (Figure 3.14). These clusters are linked with paved paths and bypaths, which wind around the houses. The houses of higher caste people, in clan-based clusters, are located on the higher terraces and those of the lower caste, at the lower terraces. These clusters are known by different clan and caste identities. Since the mountain profile is rocky and steep, the houses in the village are so built that each floor can be accessed directly from the ground. In addition, single flight wooden staircases with trapdoors are provided in the cantilevered verandas.

Though the typical house under study is 'L'-shaped, most of the houses at Village Purag and elsewhere in the Kotkhai area, are rectangular in layout. The space for tethering cattle is one large oblong room on the ground floor or *obara*. This large room is partitioned into three compartments, in which different cattle are kept separately. The height of this floor is kept low, around 1.75 m. A part of this floor can also be used for storing grass and fuel wood.

Over the ground floor, there is the traditional hidden intermediate floor – an entresol or mezzanine, locally known as the *phod*, already discussed above. The entresol is a typical feature of the Khasha house. No door from outside is provided to the rooms on the *phod*, but to keep the interior reasonably airy, small screened ventilators are provided, through which light also sneaks in to keep the interiors dimly lit. Access to these chambers of the *phod* is descent through a trapdoor on the wooden flooring of the upper storey, using a heavy wooden log, notched to form steps. Ladder is locally



Fig. 3.14: Purag – a large village sprawling on the mountain saddle

known as the *shairta*. A cantilevered deck is provided on the floor on the valley side extension. On the elevated deck, grass, fuel wood or harvested crop are stacked for threshing.

Over the *phod* is the *boad*. Technically, the *boad* is the first floor of the house, the main living area. The height of this floor is kept low, at about 2 m, so that the interiors remain cosy during winters. Except for the entrance door (*duanda*), there is no opening in the rooms, but there are cupboards inserted into the *kattb-kuni* walls, covered with deodar wood lining. A continuous projected wide veranda (*spain*) is provided on the floor on all sides, except at the back. Access to the rooms is through this multipurpose veranda. On the corners of the veranda, a fixed elevated and wide settee, with storage space is provided. This corner serves as an informal sitting area for the family during daytime. One of the rooms of the *boad* is used as a kitchen. In the kitchen, a *ghadaith* (a

wooden bench for keeping water pots) is placed. On this floor, provision for bathroom (*zazru*) is also made, but it is usually used by the female members and children of the family; others bathe in the open.

Above the *boad* (or the first floor) is the *darak*, that is, the attic floor. Access to the *darak* is provided from one of the rooms on the *boad* through a wooden ladder. In some houses the kitchen is made on the *darak*, instead of the *boad*. However, in the house under study, the *darak* was being used for storing agricultural implements. In front of the house, there is a small flagstone paved open yard called *khilwan*. It is normally used for tethering cattle in the open, but grains are also threshed there. The *khilwan* is an undemarcated paved floor, unlike the well-defined threshing-yard found elsewhere.

The house is covered with locally available rough slates laid on the combined gable and pent form roof. This type of roofing is one of the characteristic features of the Khasha secular architecture.

THE KINNAR DOMESTIC ARCHITECTURE

The northeastern fringe of the mid-Himalayan zone in the upper Satluj Valley in the lower Kinnaur may be defined as an ethno-climatic buffer zone. Here, the socio-religious beliefs and systems from the Hindu mainland and the Buddhist trans-Himalayan regions have fused and blended with the autochthonous faith systems to form a quintessential socio-cultural milieu in which the Khasha element predominates. The impact of these diverse influences is unmistakably noted in the structural woodcarvings of the residential houses and temples. This terrain abounds in deodar forests and the people have made maximum use of it in their houses and temples. It is common to find most of the residential houses and temples in many villages of this area covered with wooden planks in the style of the overlapped slate roofing. For instance, most of the houses in Village Chitkul, deep in the Baspa Valley, are not only exclusively made of wood, but also covered with wooden 'slates'. Similarly, the Maishur temple at Sungra is technically a one-piece portable massive wooden structure resting on sturdy plinth beams, and not 'founded' on the ground.

At many places in the higher reaches of lower Kinnaur, besides deodar wood, another species of pine, *Pinus gerardiana* Wall., locally known as *neoza* or *chilgoza*, is also used as structural timber. However, that wood, being highly resinous and inflammable, is neither good nor safe for structural purpose. The splinters of that wood, locally called

gyokhti, are used for lighting purposes during the night. The *chilgoza* tree is exclusive to the small stretch between Nichar and Kalpa, where, in the cold semi-arid climatic conditions, it grows wild on the rocky slopes. This tree is not found elsewhere in the Indian Himalayan region.

The wood-based domestic architecture of this region is overwhelmingly conditioned by the geophysical peculiarity of this rocky and rugged terrain, composed of mica-laden schist gneiss and conglomerate formations. The Satluj flows from northeast to southwest as a foaming, fretting and spattering river, forming a deep, dark and precipitous gorge. Thus, the mountain slopes on both sides of this river are very steep and unstable. Massive chunks of mountain and rocks sliding and destroying villages and houses is a common sight in this part. Therefore, the habitable areas are located widely apart, higher on the mountain slopes, where sunshine is plentifully available on the safer and flatter spurs, ledges and meadows.

Under such constraints, the houses in this terrain are generally not spread horizontally, but rise vertically in multi-storeys. This feature is found in the Khasha architecture in the neighbouring Shimla District also, but it is more marked here, than anywhere in Shimla District or in the rest of the mid-Himalayan zone. The reason for such a peculiarity may be that the mountain profile in this terrain, where most of the villages are located, is not only very steep, but unstable too. Therefore, it is not easy to get a safe and reasonably level site for the houses. The paucity of a suitable site for constructing a house leaves little scope for horizontal expansion. Finding a suitable new site for another house to accommodate the extended household is equally problematic and difficult. Under such constraints, people build multi-storeyed structures with maximum use of wood, so that the dead weight on the foundation is minimal. The stone or wood-and-stone walls are only made where essential—the ground floor—and the rest of the structure is wood-built.

Another peculiarity of the Kinnar domestic architecture is that, in it certain features of Khasha domestic architecture and trans-Himalayan architecture may be found blended together. For instance, the overhanging veranda on the upper floors is a typical Khasha feature, but providing a flat roof on the building is a trans-Himalayan architectural feature.

Normally, there is no separate kitchen; cooking is done in one of the living rooms on the upper floor. In the middle of the room, a large and sturdy slate stone is placed. Over it, a thick layer of well-rammed earth, with raised edge-lines, is built. Over the cooking platform, a sturdy iron tripod, locally called *meling*, is placed. The

fuel wood is placed under the *meling*, which holds the cooking pot over it. Sometimes, an aperture may be provided on the flat roof above for the smoke to escape, but in most cases, the smoke keeps whirling in the room and gradually escapes through the door. The cooking platform not only serves as a hearth, but family members can also huddle around it and keep warm. In Lahul, Christian missionaries introduced a fuel-saving portable multipurpose *chullab* made of thick iron sheet; it has an inbuilt smoke outlet system and many cooking stands to cook several dishes at the same time. The *Labuli chullba* (also known as the *Ladakhi chullba*) became so popular among the people in Lahul that the local ironsmiths started its commercial production. That *chullba* also became popular among the people of lower Kinnaur and Kullu, where fuel wood has been amply available with little effort. Of late, with the introduction of cooking gas and the chronic paucity of fuel wood, the *Labuli chullba* is increasingly going out of vogue in most places.

For the study of a Kinnar house, a traditional house was selected at Village Nichar, known as Nalch in the vernacular parlance, that is, a village of dancers. How imaginative and apt this name is, may be appreciated from the fact that the Kinnars have been eulogised as celestial dancers in Indian classical lore. Situated on a gentle mountain slope, surrounded by the lush green and thick deodar forests at an elevation of about 2000 m above mean sea level, Nichar commands a magnificent view of the snow-capped mountain ranges around and the deep Satluj gorge below. This place is well-known for its ancient *Ukha Devi* (Usha Devi) temple. *Ukha Devi* is the presiding deity of Nichar and the villages around. Agriculture and goat and sheep herding have been the main occupations of the people of this village, weaving and iron smithy being the other important supplementary occupations.

Nichar is a typical multi-occupational village of the lower Kinnaur, with a mushrooming growth of houses in a haphazard manner, because people have been building their houses wherever they find suitable land for the purpose. Most of the houses have been built in a confused clustered formation, with narrow and muddy lanes and by-lanes. However, the widely scattered houses on different terraces can be seen at other places. Such an arrangement of houses does not represent any ethnic, sociological or economic pattern, but the houses of people following different professions are built in the same localities, suggesting professional harmony.

In the residential houses and temples of the lower Kinnaur area, timber is used profusely; stone is restricted generally to the foundation and the timber-bonded stone

masonry walls of the ground floor only. The upper floors may be all wooden. Even for covering roofs, substantial quantity of wood has been used over the gabled and flat roofs. In case of the flat roof, the roofing planks are covered with rammed earth.

Most of the houses at Nichar and the villages around are three-storeyed, but there are also multi-storeyed houses having four or five storeys. The floor height is normally kept around 2.25 m. Customarily each of the upper floors except the topmost one, has two rooms. While the ground floor is used exclusively for keeping livestock, the first storey is meant for living purposes. A room on the second storey is used for threshing grains. This floor also has an open terrace in front, where clothes and grains may be spread for drying.

The size of a house and the area to be covered depends more on the availability of a suitable site rather than on the requirement and affordability of the owner. Due to scarcity of suitable land, people seldom think of building a new house for their extended family, but add another floor to the existing house. The need of a new house arises only when the existing house has become too old and fragile to stand anymore or is gutted. In fact, fire has been the single most destructive agent for wooden houses made of inflammable deodar wood in lower Kinnaur.

When someone intends to construct a house, the approval of the presiding deity *Ukha Devi* is solicited for the suitability of the site. For that purpose, a clod of earth from the proposed site is taken to the temple of *Ukha*. If the goddess is on her *jampan* (ceremonial throne), the *jampanies* (*kabar*) take her out on their shoulders. If the goddess tilts towards the clod, it signals her approval of the proposed site. In normal times, the goddess remains in her sanctum, and in that case, her oracle in the divine afflatus proclaims her decision about the site, date and time for laying the foundation. To begin with, the foundation stone is laid on the right side of the main door. Normally, Sunday, Monday, Wednesday and Thursday of the bright half of the Indian months *Baishakh* to *Ashadh*, that is, from mid-April to mid-July are considered auspicious for starting construction.

The foundation is dug about 60 cm to 90 cm deep and is about half a metre wide. It is filled with dry-stone-rubble masonry. In certain cases, hammer-dressed stones are also used for this purpose, depending upon the finances of the owner. The walls are raised in this manner up to the plinth level. Above the plinth, the timber-bonded stone masonry walls, locally known as the *doriya*, are built. The wooden framework for the *doriya* is quite substantial in this area, as timber is easily available. The gaps for doors,

niches and small openings for light and air are left in the wall during construction. No regular window or ventilator is provided; the small-screened openings serve that purpose. Similarly, the lintels or arches are obviated by the *cheol*, the wooden framework.

Depending upon the availability of wood and the capacity of the owner, the timber-bonded stone masonry wall may be restricted to the ground floor only, or up to the roof level of the house. If one can afford it, wooden walls for the upper floors are preferred, as the wooden walls not only keep the interior insulated from the outside temperature, but they are also considerably light on the substructure. Further, the wooden walls made of intricate staggered framework and joinery not only ensure sufficient space for the cupboards, shelves and doors without disturbing the floor area; they can also withstand all types of stresses and strains. The only disadvantage is that wood is highly susceptible to fire.

In the process of raising the walls, the floor beams and joists are placed in position at the appropriate levels, and the joists are extended beyond the walls to support the floors of the cantilevered veranda. On the flooring joists, thick deodar wood planks, sometimes as thick as 5 cm to 7 cm, are laid to complete the flooring work. No other flooring material is spread on those planks. What is noteworthy in the whole process is the fact that the local *ores* – the hereditary woodworkers – are so accomplished in handling wood with perfect joinery and without nails and screws that even after years of weathering the joints remain flawless, firm and strong.

In each of the upper floors, a cantilevered veranda is provided in the front and on the sides. This veranda is generally closed completely or partially, with wooden panels fitted in the framework. Small and stylised arcuate openings are left in those panels to admit light and air into the interior. The panels are artistically carved from outside to beautify the façade. These carved panels are some of the finest specimens of architectural woodcarving in the secular architecture of this region. In some rare instances, the veranda may be kept open. Normally, the back of the house does not have a veranda. At times, a part of the projected veranda near the winter living room is reserved for stocking fuel wood for the winter (Figure 3.15).

When the walls reach the roof height, beams and joists are laid on the walls to make the under-structure for roofing. These are extended on all the sides beyond the wall to cover the overhanging verandas. Thick wooden planks are laid on these beams and joists to form a flat roof. Over the roofing planks, birch-bark lining is spread, over which moist sieved clay is rammed to compaction. This process is repeated occasionally.



Fig. 3.15: Fuel wood stocked for winter in lower Kinnaur

During winters, removing the snow piled on the roof with wooden shovels (*woll*) is a routine feature.

While most of the roofing area of the house is covered with the flat roof, the superstructure walls of one of the rooms are raised further to form a room on the flat roof; it is meant for threshing grains. Over that room, a gabled roof is provided. The method of making the gabled roof is very primitive and wasteful. Since slate is generally not available in most of the places in the lower Kinnaur; wooden planks are used for covering the roof in the manner of laying slates. Those planks have to be replaced after a few years. However, in the Baspa and Bhaba valleys, coarse and thick slates are found. People of those valleys use slates as a roof covering material. Once the structural work of the house is complete, the interior surface of the walls, if these are not wooden ones, are plastered with a mixture of cow dung and mud. Whitewashing is unknown in this area, as no white earth is available around. However, of late people are using ruddle (*geru*) and varnish paints on the woodwork.

There is no provision for a separate kitchen in most of the houses in this area. For cooking meals, an iron tripod, called *meling*, is placed over the central fireplace in one of the living rooms. That *meling* serves as the cooking stand. For the central fireplace, a thick and large stone is placed over the wooden floor. Over that stone, a thick layer of rammed earth is provided, with edging on all the sides. There is no regular chimney,

but an opening is made in the roof above the *meling* for the smoke to escape. The opening is locally known as *dusrang*; it is open enough to admit light. Thus, it serves a dual purpose: as an escape vent and for providing a skylight. At the time of rain or snow, the *dusrang* is closed by placing a *chanura* (stone slab) over it. When the family moves to the lower floor during winter, the *meling* is installed in one of the rooms on that floor and this becomes the winter living room. Since the fire keeps burning in the central fireplace, that room, without any smoke-vent and only a door, always remains filled with soot and smoke. Nevertheless, that is also the cosiest place in the house during winter, wherein all the family members feel comfortable, huddled around the fire. In most of the houses, there is a cornice in one corner of the living room, where the family god *Kimshu* is installed.

Every household has a separate storage cabin reasonably away from the house, called *kothar*, for storing grains. People avoid storing grains in the house, lest an accidental fire should destroy it. The *kothar* is a sturdy square or rectangular wooden structure of about 2.00 x 2.50 x 3 m, with a wooden gabled roof over it. It is divided into four apartments, each with a small door and locking arrangement. This door is opened only when something has to be taken out. There is also a small inlet at the top for putting the grains in. In one such storage apartments, brackets are also made on the walls to store *shakpo* (dry meat) and fruits.

After the house is complete, a housewarming function, locally known as *gaurasing*, is held. Customarily, the hereditary *ore* or *baddhi*, who works as the architect, engineer, stoneworker and woodworker, all rolled into one, is not employed on a daily basis or contract. He is formally invited to the *gaurasing* along with his family. A grand feast is held in his honour in the evening. Next morning, the owner offers him a *thali* (plate) full of ghee and some money. In addition, clothes are given to him and his wife. She also receives silver bangles (*dbaglo*), weighing from 200 gm to 300 gm. It is mandatory that the owner should satisfy him with ample gifts lest the curse of his displeasure, locally known as *chul*, sticks to the family. The customary institution of *gaurasing* has now almost gone out of vogue, but the hereditary *ore* and *baddhi* still work on daily wages or on contract for not only their traditional clients, but for others as well.

DOMESTIC ARCHITECTURE OF THE TRANS-HIMALAYAN REGION

THE TRANS-HIMALAYAN HIGHLAND REGION NORTHEAST OF THE GREAT HIMALAYAN Range, spread over the Ladakh region of Jammu and Kashmir and the Lahul and Spiti and upper Kinnaur area of Himachal Pradesh, forms a distinct class by itself. In this highland region, *neither the land nor the sky there is like ours*. This region 'possessed of a necklace of radiant snow mountains' is one of the most elevated places on the earth. High altitude, severe climatic conditions and the blinding glare of snow and ice deposits, result in one of the harshest living conditions on earth. This region is wholly Buddhist, and no stone-built or wooden house is found here, except in the lower part of upper Kinnaur around Kanum, where pine forests may be found. These forests start becoming increasingly thinner beyond Kalpa and around Poo, where they turn into bushes. In fact, due to acute shortage of wood and good quality stone in this region, their use is a bare minimum. The mud built box-like houses (Figure 4.1) of this region blend so inextricably with the surrounding denuded hills that it may be hard to distinguish between them while looking down from a high peak or from the sky.

The Mongoloid-Tibetan speaking inhabitants of this region, known as *Kirat* in the later Vedic literature, are known to have occupied this tract around the middle of the first millennium BCE. Besides the *Kirat*, the other indigenous communities of this region are the Mon, Dard, Hunja, Drokpa and the Buzhan. Ethnic distinctions notwithstanding, all the inhabitants of the trans-Himalayan snow-desert are ardent followers of the Tibetan form of Buddhism.

Because of the dry and cold climatic conditions in this trans-Himalayan wilderness, there is almost a total absence of any type of vegetation. Therefore, the only material available for construction is the roughly hewn schist-gneiss, sunbaked mudbricks and clay. Wood is extremely scarce here, being used here only as the last resort.



Fig. 4.1: A panoramic view of Village Tandi on the confluence of Chandra and Bhaga

The limited choice of construction material and prevailing geo-climatic compulsions have been deciding factors for the development of mud-based domestic architecture in this inhospitable region. Because of the harsh climatic conditions, mud alone could be used as a bonding and building construction material – right from the erection of walls to the covering of roofs. Thus, the construction techniques developed here are essentially earth-bound. Since mud has minimum architectural possibilities, the residential houses and the monasteries of this zone are box-like structures. Due to extremely cold climatic conditions, minimum openings are left on the outside so that the interiors may be kept warm with the use of minimum fuel.

The walls of the houses are mostly made of large-sized sundried mudbricks. Sometimes, well kneaded mud is pasted between the shutterings of the rough wooden planks or woven willow twigs. In this manner, the wall is raised layer by layer. Where stone is easily available, it is also embedded. At times, larger random stones are also used for raising walls. In such a case, mud is used as the bonding material. The outer faces of the in situ rammed earth walls of the residential houses, as in the monasteries,

may at times have wider bases, tapering towards the top. Thus, most of the outer walls, especially of the tall structures, are on slopes. This innovation imparts stability to the multi-storeyed structures.

Because of extreme paucity of timber, the larger rooms are divided into squares or rectangular sectors by erecting wooden posts. The roofing beams and joists are spanned on those posts. The planks or twigs are placed over the joists, over which birch-bark sheets are spread, followed by thick layers of stiff clay. Sometimes, depending upon the availability, a special type of alluvial clay, called *markula* or *tua*, known to possess excellent waterproofing and bonding quality, is used for the purpose.

One of the most ingenious and admirable aspects of the houses in the trans-Himalayan region is the provision of a dry toilet as an integral part of the house. Such provision is altogether missing in the planning of traditional houses in the sub-mountainous and mid-Himalayan region, and it may even be unknown to most parts of the world. For the toilet, one of the small rooms at the back of the house, which is easily accessible from the other apartments, is selected. In that room, a small oval or circular opening is made in the middle of the floor on the second storey for one to squat over. Dropping through that opening, the excreta accumulates in the ground floor enclosure. One is also supposed to throw a few handfuls of earth on the dump below to cover the excreta. The day's accumulation is covered with straw and earth, to prevent a foul smell. The family members also urinate in the toilet so that the urine is soaked into the dump below. After sometime, the deposited night soil decomposes into excellent organic manure, and is removed through a small door and spread out in the fields.

In such places where most of the animal dung is made into cakes and dried to be used as fuel, the decomposed night soil is the most effective substitute for manure. In this area, where the climate for most part of the year remains arid and arctic, this sanitary arrangement works satisfactorily. In some cases, especially in the Zaskar area, where the villages are located on the rugged mountain spurs or on the edge of steep inclines, a small room is built apart from the main building to serve as a toilet, so that the excreta falls into the ravine several metres below. That is certainly a very intelligent and efficient solution to the sanitary and public health problem, which other people elsewhere have yet to solve. In the trans-Himalayan region, the toilet is known by different local names, while it is known as *chhakcha* in the upper Kinnaur and Spiti, in rest of the trans-Himalayan region it is known as *chagra*. However, the bathroom

is conspicuous by its absence in the functional scheme of the house in this arid and arctic region.

Agriculture is almost non-existent in the trans-Himalayan region; only one crop of barley, buckwheat or peas is grown in the whole year. Therefore, there is hardly any justification for the grain threshing yard (*khwala* or *khalyan*), but as a substitute for that, there is an enclosed barn attached to every household. This enclosure is known as the *nin-pa*, that is, the open barn and is used to tether the livestock under the sun or during fair-weather conditions in summer. People in the trans-Himalayan region keep different varieties of animals – mountain cows, sheep and goats, yak, *dzoe*, *dzomoe* (a crossbreed of cow and yak), and *goonth* (trans-Himalayan ponies), and others, for subsistence. Therefore, a major part of the ground floor has to be kept for tethering those animals indoor and for stocking fodder to feed them.

For the housing pattern of this area, one may study a typical house at the ancient monastery-village Kanum in upper Kinnaur. In the domestic architecture of upper Kinnaur, a blend of the wood-based architecture of lower Kinnaur and the cubical form of the mud-and-stone based trans-Himalayan architecture (Figure 4.2) may be found.



Fig. 4.2: Box-type mud-built houses – a common feature in the trans-Himalayan snow desert

For the authentic mud-and-stone based domestic architecture in the trans-Himalayan region, for this study, a typical house at Tandi, where the rivers Chandra and Bhaga join (to form Chandrabhaga in the Lahul area of the Lahul and Spiti districts), was selected. Similarly, a typical house, one each from Spiti, Ladakh, and Zaskar regions, will be studied to cover the variegated geographical mosaic of the trans-Himalayan region.

A TYPICAL HOUSE AT KANUM IN UPPER KINNAUR

Surrounded by the snow-capped mountain ranges and the endless hues of green foliage cascading along the slopes, Kanum is a sizable multi-community village of upper Kinnaur. Situated on the undulating and uneven plateau, amidst the fruit trees of *chuli* (*Prunus armeniaca* L.), *akbrot* (walnut), wild apricots, *bemi* (*Prunus persica* (L.) Beatsch), *muldug* (*Populus ciliata* Wall), *palu* (wild apple), *chilgoza*, and so on, the village is spread in three *abadi* (settlements), that is, the upper Kanum, central Kanum and the lower Kanum. These divisions appear to be arbitrary, for the village folks are unaware of such distinctions. Nevertheless, these three *abadi* represent the caste-based stratified configuration of the village. The houses belonging to the Rajput (obviously the Khasha) are clustered separately on the highest terraces. The houses of Domang (metalsmiths), Ore (woodworkers) and Chomang (or the Koli) are clustered separately, at the lower levels on two sides of a ledge that descends abruptly and precipitously to the edge of the Satluj. Despite that stratified clustered arrangement, the village pattern represents a haphazard and confused arrangement of houses – a common feature of most of the villages in Kinnaur. One reason for such an unplanned village layout may be that the village was inhabited by different communities during different periods.

The first to settle at Kanum were probably the Chomang. That assumption is affirmed by the fact that the *grokch* (oracle) of *Dabla Devta*, the presiding god of Kanum belongs to the Deoti sub-clan of the Chomang. The Chomang call themselves Koli, but they also perform the job of leather workers or Chamar. Possibly, the Rajput (Khasha) also settled in the village simultaneously. They could assert their might to occupy the best pieces of land for their houses at the highest locations. They are known to have immigrated from the Newar Valley of Rohru to Kanum. This connection is important to explain the existence of some of the Khasha architectural peculiarities of the Rohru area in this region. The influence of the Rajput on the Chomang, so as to occupy

the highest terrace in the locality is evident from the fact that the *kardar* (the chief executive) of the presiding god of Kanum, *Dabla Devta*, is always from that community. The Domang (metalsmiths) and Ore (woodworkers) are the artisans, who could not find acceptance among the Rajput, but they regarded themselves higher than the Chomang on the social ladder. Therefore, they chose to settle separately. With the expansion of families in the course of time, houses came to be built around the nucleus, forming different community-based clusters. Because of the shortage of space in the clusters, some of the households of the village spilled over from the parental localities to the peripheral locations.

The caste-based distinctions notwithstanding, the structural and functional pattern of residential houses in the village is identical. The only perceptible difference between the houses of different communities is their size, but that may also be due to economic rather than caste-based social status of the owner. The residential houses of Kanum are structurally, architecturally and functionally the same as are found anywhere else in the upper Kinnaur, up to Poo (Figure 4.3). Beyond Poo, the geophysical scenario is entirely different and so is the architecture.

The architecture of houses in the upper Kinnaur area represents a blend of wood-based architecture of the lower Kinnaur and the mud-and-stone based cubical trans-Himalayan architecture. Thus, despite the use of wood in these houses, the overhanging verandas are conspicuous by their absence and so are the sloping roofs. However, the stone-filled timber-bonded walls are meant only for the ground floor. All the upper storeys are entirely made of wood, including the flat roof. Thus, though structurally, it is largely a wood-based structure, yet architecturally it has a box-like cubical appearance, with a flat façade. However, it is not as stark as the mud-and-stone based trans-Himalayan architecture. These houses, built on different terraces one above the other, from a distance look like huge and gloomy boxes piled in a staggered formation one above the other.

Most of the houses in Kanum are south facing, possibly because the valley opens to that side and the sun remains in that direction for most of the daylight hours. Customarily, most of the houses have three storeys. The ground floor is known as the *bong*, the first floor is called *ghunsa panthang* and the second or uppermost floor is known as the *thoring panthang*. The floors above the ground floor are collectively known as the *forting*.

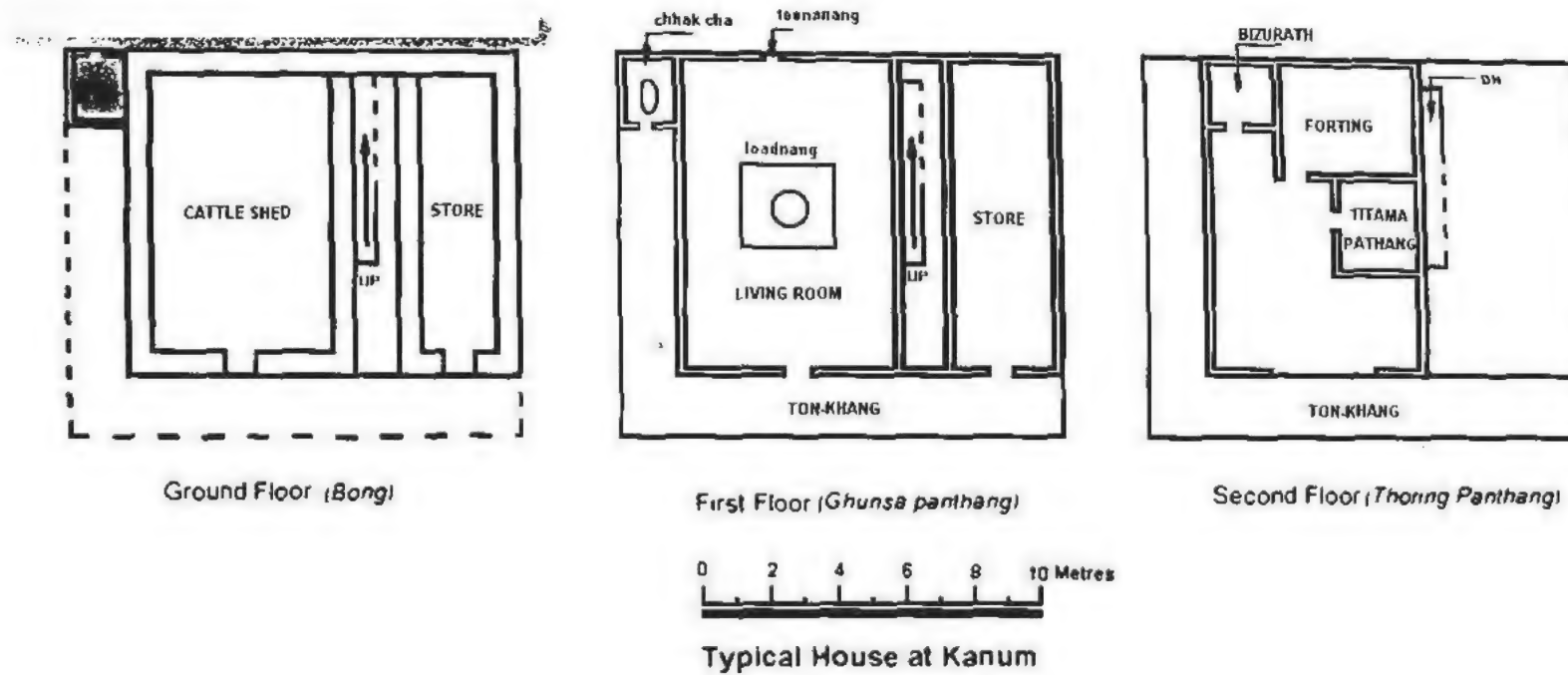


Fig. 4.3: A typical house in upper Kinnaur at Kanum

Generally the *bong* or the ground floor is exclusively reserved for tethering livestock, as elsewhere, but here the list of livestock is not only different but large also, as explained above. Obviously, the accommodation for these animals has to be quite large and spacious. A sturdy small single shutter-door, fitted in an equally massive doorframe in the middle is used to enter into the *bong*. One has to bend on one's knees to enter the room. Except that little door, there is no other opening in the *bong*. Consequently, it is pitch dark inside. In front of the *bong*, there is a narrow open paved yard defined by an elevated parapet. This is a multipurpose open space in front of the house, where the animals may be tethered in fair-weather conditions, people may congregate and crops may be gathered and threshed.

In a larger house, a part of the *bong* may be used as *quim* (store), and a passage to accommodate a staircase to the upper floor may also be provided. Each of these functional areas is provided with an independent door. In any case, provision for ventilation is completely missing on the ground floor. Normally, the rooms of the *bong* are very large for the beams and joists to hold the upper floors. Therefore, sturdy wooden posts are fixed at various places in the rooms to support the beams. The height of this floor is between 2.00 m to 2.50 m.

Above the *bong* is the *ghunsa panthang*. Generally, the access to the *ghunsa panthang* is provided externally from one side of the house through a wooden staircase. However, in the present case, a staircase has been provided in the passage between the barn and the store on the *bong* (ground floor). The entrance to the rooms on this floor, the *ghunsa panthang*, is provided from *ton-khang* – a projected narrow glazed veranda on the front and sides. That veranda also serves as a place for the family to relax under the sun. During the winter months, the *ghunsa panthang* is used as the living area for the entire household. The family lives in a single large room with little or no pretension to privacy. In the middle of that room, a raised large square platform is made for the central fireplace. On it, the *loadnang* (a large iron tripod) is installed to serve as the cooking stand. The fireplace not only keeps the room warm, but meals are also cooked on it by placing the pot on the *loadnang*. The floor of the *ghunsa panthang* is made of thick wooden planks, laid on the sturdy beams and joists, spanned across the rooms on the posts and walls. On the back wall of *ghunsa panthang*, a small opening is made for the smoke to escape and to admit light and air into the room. It is known as the *teenanang*. At one corner of the *ton-khang*, the narrow projecting veranda, a small enclosure serves as the *chhakcha* (dry toilet).

The *thoring panthang* or the second storey is normally the topmost storey of a house. It is the summer residence of the family, with lots of open space and many doors, mostly facing east to admit sun and light. The arrangement of rooms and the distribution of space on this *panthang*, that is, the floor, differ considerably from the floors below it. On one side near the entrance, there is a small cabin, called *titama pathang*, where vessels containing water are kept. Then, there is a large room, called *forting*. On the back of *forting* is a small store for grains, called the *bizurath*. The other small room on this floor is the dark and stuffy *quim*, that is, the sundry store, where utensils are kept during summer. On the wooden floor of the *forting*, usually mud (*phathing*) flooring is also provided, but it is not as compact as found elsewhere in the lower areas.

The carved woodwork in these houses deserves special mention. The doorframes, shutters and the front panelled parts of the wooden superstructure are meticulously carved and ornamented by the traditional *ore* (woodworkers). These carvings represent numerous geometrical, floral, faunal and figurative motifs. At times, episodes from classical Buddhist and Brahmanic traditions are also depicted. No paint or varnish is used to protect the woodwork, but occasional coats of *chuli* oil have been noted on the doorframes of a few houses only. Thus, the woodwork remains exposed to the elements, but possibly nature in the arid and arctic trans-Himalayan region has taken good care of these artistic creations.

The presiding god of Kanum and the surrounding villages is the autochthonous demonic god, *Dabla Devta*; it is obligatory for the people to appease him before starting construction. However, having embraced Buddhism along with his votaries, *Dabla Devta* relinquished his authority to the Buddhist monastic order. Therefore, not the deity, but the lama is consulted for the construction of a house in this area. He asks the name of the person intending to construct a house and then works out essentials after consulting the scriptures. He decides the direction in which the main door should face, but the site conditions rather than the lama finally settle the matter. An auspicious day is identified for laying the foundation. The lama also declares the name of the person who should lay the foundation stone. On that occasion, the lama performs ritual worship and the *ore* is entertained, for he is the know-all in-charge of construction. The construction is undertaken only during the summer months, as nothing can be done in the open under wintry conditions, with metres of snow and the chilling blizzard in the trans-Himalayan region. Customarily, the *ore* engaged for the job have to complete the job once begun. The completion of a house may take a couple of years or more, depending upon the

size of the house. It is necessary that the building material is already available at the site for the *ore* to start work. Therefore, the owner keeps all the material, including stone, timber, *burché* (local variety of bush) and *shakpang*, that is, *bhojpatra* or birch-bark, and so on, ready for work through community participation.

The foundation is normally dug 60 cm to 90 cm deep, depending upon the availability of firm strata. It is then filled with stones. As the ground profile is on a slope, the plinth is seldom taken above the ground level, and the walls for the superstructure are straightway raised from the ground level. The thickness of the wall generally remains about 90 cm to 120 cm and these are made of timber-bonded dry stone masonry. This type of wall is known as the *doriya*, elsewhere in the lower region, it is known as the *katth-kuni*. The *cheol* (wooden framework) for the walls are made of either deodar or *chilgoza* wood.

The timber-bonded stone masonry walls are only taken up to the height of the ground floor. Above that, the walls are all made of thick wooden planks, as thick as 5 m to 8 cm, fixed in the sturdy wooden frames. This method of making wooden walls is, in fact, very naïve compared to the house at Nichar, discussed in the section *Kinnar Domestic Architecture* in the previous chapter.

For laying floors, the beams are spanned across the rooms, resting on the outer walls on the ground floor and on the sturdy vertical members of the panelled wooden walls on the upper floors. Since the rooms are of abnormally large size, wooden pillars are erected in the room to prop up the beams. On the beams and wall plates, joists are fixed. On such a framework, thick planks are fixed to complete the flooring work. The planks are kept exposed. The entire woodwork of flooring and roofing is very crude, with beams, joists and planks hewn in a very casual and rough manner. Nevertheless, the top surface of the floor planks is made smooth by repeated scrubbing and rubbing. A similar operation is carried out for laying the *khayap*, that is, the roof. However, over the thick roofing planks, a lining of *shakpang*, that is, *bhojpatra* is spread. Over that the tender shoots of the *burché* (a local variety of bush) are spread and beaten to compaction, followed by a layer of 15 cm to 20 cm thick earth. The operation is carried out in a gradual manner in different stages. First, *phathing* or mud is carefully spread all over to a thickness of about 3 cm to 5 cm. It is then beaten with small and flat wooden clubs (*tekut*). After this layer is compacted, the process is repeated several times; layers of dry earth are spread; water is sprinkled over each layer and is beaten to compaction until the roofing is considered strong enough against rain and snow. The

roofing treatment has to be repeated occasionally to keep it reasonably impervious. During winter, the snow piled on the rooftop has to be immediately removed with the *woll* (wooden shovel-like implement) lest the roof starts leaking and collapses under its own weight.

No finishing work is done. The *doriya* walls are not plastered from outside, but the cow dung and mud plastering is done on the inner surface of the walls. Thus, the exterior of the house gives a crude and unfinished look. The only pleasing parts of the house are the carved panels and doorframes.

At some distance from the house, a small wooden storehouse is made for the storage of foodstuff and is known as *pinchhung*. This cabin is internally partitioned into different compartments for storing different items separately. The roofing arrangement for *pinchhung* is similar to that of the main residential house.

Customarily, no wages are given to the *ore* engaged in the work. On the completion of the house, the owner provides the *ore* and their wives with woollen clothes, footwear and some cash. The spouses of *ore* also get sets of traditional silver ornaments. The artisans are feasted sumptuously with meat and *chhang* (local liquor). The senior *ore* is given a *thali* (plate) filled with melted ghee, in which he is required to see his image. If the reflection is not cheerful, that portends dissatisfaction of the artisans. The owner is obliged to shell out some more money until the *ore* are pleased by the aforementioned 'image test'.

The lama signals the start of house construction work, and he has to conclude it by performing certain rituals to ward off evil spirits and conducting the housewarming ceremony, known as *poriashma* or *gharsning*.

A TYPICAL LAHUL HOUSE IN TANDI, CHANDRABHAGA VALLEY

Tandi is strategically located at an elevation of 3048 m above mean sea level at the confluence of the two rivers – Chandra, flowing from Chandratat and Bhaga originating from Surajtal. Both these glacial lakes are situated near the Baralacha Pass (4891 m). Tandi, where both these rivers join to form the Chandrabhaga River, therefore not only marks the confluence of the two rivers, but also a meeting point for the three riverine valleys – Gara, formed by Bhaga, Rangoli formed by Chandra and Pattan formed by Chandrabhaga. Thus, the Village Tandi demarcates the tail end of Gara and Rangoli valleys, and the head of Pattan Valley. Tandi represents three shades of Lahuli

lifestyle, all rolled into one. The Tibetan form of Buddhism is the predominating faith in the valleys of Gara and Rangoli, the people of Tandi and the villages downstream are as much Buddhist as they are Hindus. They worship the same god as the Buddhist Avalokiteshvar and the Hindu Trilokinath at Tunde and the same goddess as the Buddhist Marichi Vajr Varahi and the Hindu Mahishasurmardini at Udaipur, downstream in the Pattan valley.

The environs of Tandi, except for the terraced fields in the locality and a small cluster of willow trees, are rugged and bare with pasture slopes around. The unyielding terraced fields have been made fertile by diligent villagers with application of farmyard manure through many generations. The ingenious folks have also trained the glacial rills through channels into the reservoirs for irrigating their fields. Thus, while in the upper terrains, only one crop is sown in a year, the people of Tandi (like the people of the Pattan Valley) reap two crops within a span of six-seven months during the summers. Cultivation of cash crops, like potato, peas, hops and *kuth* has virtually transformed the lifestyle of the people. The economic prosperity is well-reflected in their houses (Figure 4.4). The houses though built in the traditional style are better appointed and equipped. The climate in Lahul remains dry and cold, but bracing during the summer.



Fig. 4.4: A typical box-type house of Lahul area

The average height of the Lahul area is about 3100 m, and most of the villages are located around that elevation.

The people of Tandi, and most of the Lahulis, are very shrewd, discerning and resourceful. They are very good and daring traders, going as far as the Central Asian and Indian marts on their business errands. Imbued with mental resilience and a remarkable capacity to imbibe new ideas, these people have learnt many crafts and gained immensely from the Moravian missionaries, who came here in the middle of the nineteenth century. Yet the Lahulis resolutely thwarted the attempts at indoctrination by the missionaries. The smokeless cooking-cum-internal heating system, popularly known as the *Lahuli chullba*, or *Ladakhi chullba*, that has been noted before, potato cultivation, knitting, literacy, and so on, are some of the innovative ideas that the Lahulis learnt from the missionaries. However, the most important contribution of the Moravian missionaries in the context of the present study has been in the domestic architecture.

Joint family system is a typical feature of the trans-Himalayan society, especially at Tandi and rest of the Pattan Valley. Although the traditional custom of polyandry considerably restricts the size of the family, the custom is now fast on the decline. Consequently, extended families, with parents and married sons with their children live together under one roof. Therefore, the houses in the Pattan Valley are much larger and can accommodate large households, unlike houses in the rest of the trans-Himalayan region, where, customarily, only the eldest brother lives with his wife and children in the ancestral house, the parents being shifted to the small house (*khang chung*) and the other brothers become monks.

Though not rigid, the caste-based distinction is clearly reflected in the distribution of houses in the village. The houses of Buddhist families are grouped together. Though they profess Buddhism, they also have faith in the Hindu scriptures and deities. Majority of the houses occupied by the Buddhist families are concentrated in the central part of the village. The houses of the Lohar (known as the Gara and Domba elsewhere in Lahul) and the Sippi (also known as the Chanal or Chahan) are distributed in the southwest and northwest outskirts. The Lohar and Sippi have settled at Tandi, coming from Kullu in the remote past. They profess to both Hinduism and Buddhism. In fact, religion-based distinction here is so lax and vague that both faiths are at par. All keep Buddhist and Hindu scriptures in their houses, but none in the village can read them. On the festivals, as on *Dudcchang*, a lama is invited to read them. Thus, some of the Buddhist houses in the village have a separate prayer room, called *chos-khang*. That room

is large enough for the people to congregate for religious services. In the *chos-khang*, various Buddhist images may be found arranged on one side on an altar, known as *lha-khang*. No such room is found in the houses of the non-Buddhists.

Most of the houses in the village are east facing and are clustered together on a level stretch of land and are well-ventilated with large windows, with well-trimmed outlines and neat and tidy exteriors. The houses are so designed so that these serve well both in summer and winter (Figure 4.5). Most of these present a beautiful look. For these elegant features, probably the Moravian missionaries deserve credit. However, some of the old houses in the village have only small apertures. In winter, with metres of snow piled all around, outdoor activities virtually come to a grinding halt, with people confined indoors; however that is the busiest period for indoor activities and festivities. To ensure that the inmates do not have to go from the outside to different floors, each floor is connected with an internal staircase. Each house is stocked with ample supplies of fuel, fodder and foodstuff for the winters. For the storage of these items, storerooms (*dzod*) are provided on every floor. Such stores meant for keeping food grains are equipped with large storage bins of slate set in wooden frames and plastered with dung-mud *gara* on both sides. These bins are known as *dotha*.

On an average, a house measures about 14 x 12 m on the plinth. Most of the houses are three storeyed. The height of each floor remains about 2 m, the height of the ground floor being lesser than that of the floors above. The ground floor is known as the *pa*. It normally comprises four rooms of equal size, two on each side of a wide central passage. From one side of that passage, a straight-flight wooden staircase is provided to the first floor. The front rooms (*tsang-ra*) on both sides of the passage are earmarked for tethering cattle, sheep, goats and horses. The *tsang-ra* have direct access from outside and as well as from inside. The internal doors are used for supplying fodder to the animals during winters. The rooms in the back are used as *dzod* (stores). In one of these stores, *dotha* are built for storing food grains and so on, and in the other, fuel wood (*sing*), cow dung cakes (*basrang*) and fodder are stored. On such a floor, a small enclosure is also made to collect the night soil from the toilet (*chagra*) on the upper floor.

The first floor (*nipuri*) is the living floor, especially in winter. Access to it is through a staircase from the passage on the ground floor to the *chbinga* – a wide passage on the first floor. To the left of the *chbinga* in the front, is a large room, known as the *srelsa*.

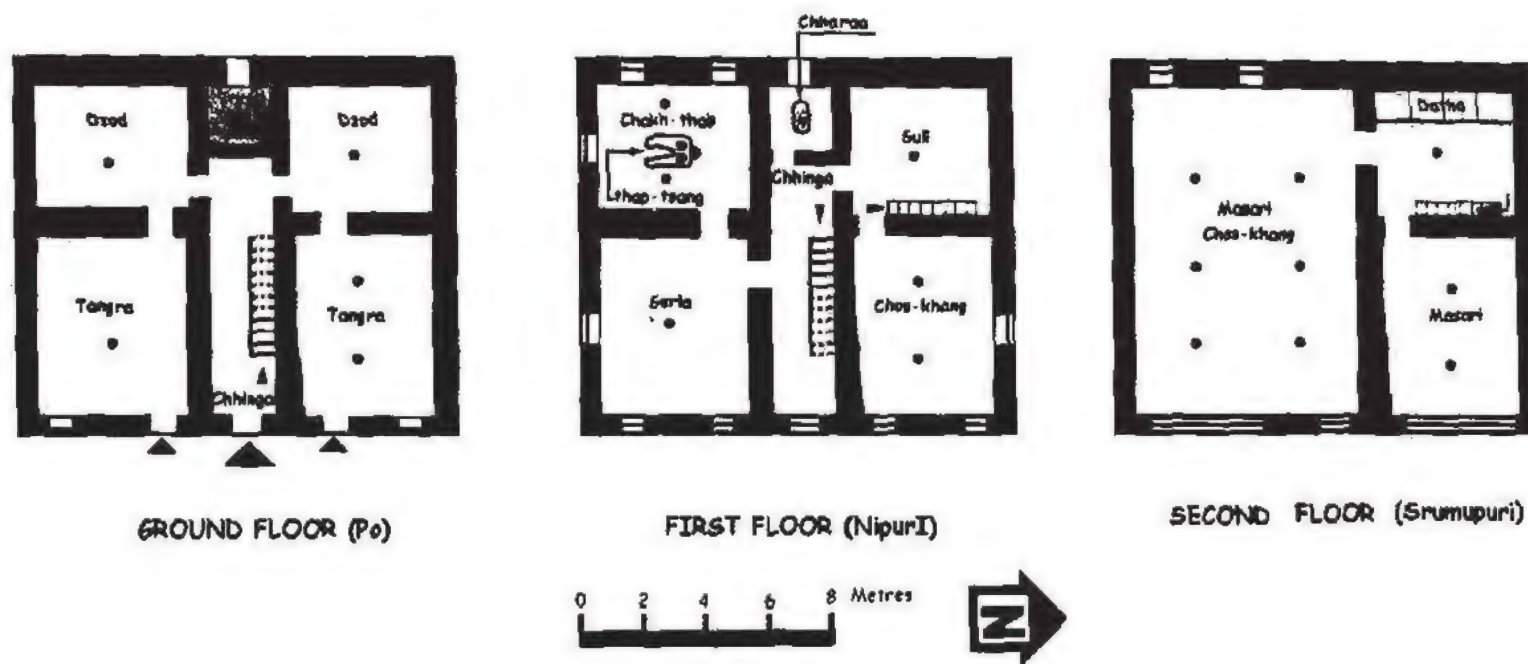


Fig.4.5: A typical Buddhist (Bodh) house at Tandi

In a two storeyed house, the *srelsa* is used as a living room during the summer months, but in a three storeyed house, it is used as one of the living rooms in winter.

Since most of the houses in the village face east, the rooms at the front receive maximum heat from the rising sun. It is for this reason that maximum openings are provided in these houses on the front side. However, most people prefer using one of the back rooms of the *srelsa* during winter. This back room is known as *chakh-thab*. In the *chakh-thab*, the *Labuli chullha* is installed in the middle on a fireproof raised platform (*thap-tsang*). The *Labuli chullha* is known as the *tandoor* in the Lahul area. It has a stylised vertical chimney through which the hot smoke, while warming the interior, escapes outside. The other room on this floor is used as the *chos-khang*, or the prayer room. On one side of the *chos-khang*, Buddhist images are kept on the *lha-khang*. In the three storeyed house, the *lha-khang* is normally used for the guests and storing sundry kitchenware; the *chos-khang* being provided on the upper floor.

The toilet or *chagra* is provided at the back of *chbinga*. In a few houses, a bathroom may also be found adjoining the toilet. However, where no bathroom is provided, the women take bath in a corner of the *po*, and the men folk in front of their houses. Next to the *chagra* (if provided), is a small storeroom. In that storeroom is a small wooden chest (*suli*), in which *saktoo* (coarsely ground roasted grains of barley) and flour are kept. From that store, a single-flight staircase leads to the upper floor.

The third storey is known as the *srumupuri*. On that floor is one large and spacious room over the *srelsa* and *chakh-thab* of the second storey. A large window with glass panes keeps it well lit. This room is known as the *chos-khang* or prayer room. On one side, a large altar is provided to enshrine the votive objects and images. This altar is known as the *lha-khang*, that is, the divine abode. The size and furnishings of the *chos-khang* are regarded as an indicator of the family's prosperity. Adjoining the *chos-khang* is the *masari*. This room serves as one of the sleeping rooms during summer. A handloom may be installed in one corner in this room. This room is well-lit with a large window. On the back of the *masari* is a storeroom, in which dried cow dung cakes (*basrang*), fuel wood (*sing*), grass-shoes and sundry items are stored.

The walls of the houses in the village are made of random-rubble stone masonry in mud mortar, interspersed with wooden framework after every few courses of stone masonry. Thickness of the wall is normally 60 cm. This type of stone masonry wall, with wooden framework spaced widely apart, is known as *dhol-maide*. The wooden floor and roof are laid in a manner similar to the house at Kanum, discussed earlier (see the

earlier section entitled *A typical house of Upper Kinnaur at Kanum*). However, in place of the deodar or *chilgoza* wood, *kail* and *devidiar* (pencil cedar) wood is used in this area; deodar is rare. Since the size of rooms is large, sturdy wooden pillars are planted in the rooms on all the floors to prop up the beams and joists. In most of the houses, the walls are plastered with cow dung-mud mortar from both sides. This process is occasionally repeated. The outer faces of the walls are usually plastered on the *Shegtsum* festival in summer and the inner sides, a few days before the *Kuns* (Phagli) festival in winter.

The masons and carpenters for constructing a house are brought in from outside on the basis of daily wages. They are also given meals in addition to the pre-settled wages. However, for the unskilled hands, the people come forward under the customary practice of voluntary community participation.

The condition of the Lahauli villages and houses was not as impressive about a century and half ago as it is today. Harcourt (1972: 48) toured Lahul extensively during his stay in Kullu as an assistant commissioner. He paints a dismal and gloomy picture of the Lahauli Village setup and houses in about 1870 CE. He notes:

The Lahoul Village is, for the most part, but a collection of rude huts of mud, stone and timber, protected by a flat roof, the lower storey being given to the cattle, and, in wet weather, being always filthily dirty: the upper portion of the house, when there are two storeys, is used by the family. In the Chundra Valley there are some villages in which the houses are all massed together in a circle; and this plan has undoubtedly been adopted for the sake of security and warmth in the winter, when this part of the country is ten and twelve feet deep in snow. The most striking, and probably the largest, village in Lahoul is Kardung, situated on a spur of the range to the left of the Bhaga River, the houses here being more carefully built than they are elsewhere. Tara Chund, the Negee of Lahoul, resides at Kolung, on the right bank of the Bagha, but his mansion is of a very humble description; and much the same may be said of the cottages of even the wealthier *Zemindars*.

A TYPICAL HOUSE IN SPITI VALLEY

Excluding the Pattan Valley in the lower Lahul, where faith systems are liberal, in the rest of the vast trans-Himalayan highland tract, Tibetan Buddhism is firmly entrenched. The houses in this Buddhist snow-desert may look larger on the plinth, but the

actual floor area between the thick walls is lesser against the houses at Tandi in the Pattan Valley. The thickness of the rammed earth walls varies from 75 cm to 120 cm depending upon the orientation of the walls. The windward walls are normally thicker to serve as effective barriers against the chilling winter winds, but the leeward walls are relatively thinner. Nevertheless, these walls have to be strong enough to take the heavy superimposed dead-load and live-load. The inner walls are thinner, 75 cm or less in thickness. These 'thinner' walls normally serve as partitions, but have also to share the superimposed load of the heavy mud flooring. Further, too many smaller rooms on each floor necessitate more internal walls, which also occupy considerable floor area. Thus, the walls consume most part of the covered area, leaving the net floor area much reduced.

Besides the structural and climatic parameters, the other factor responsible for the characteristic small size of the houses in this region is the predominant influence of the monastic clergy over public and family life. Under the customary monastic diktat, every family should pledge their eldest son to monkhood. However, this practice has been altered to the elder brother's advantage under the institution of primogeniture in Spiti and Ladakh, where the eldest brother inherits all the property of a family and lives a householder's life. Hence, he is known as the *khang chen-pa*, that is, the big householder. Thus, while the eldest brother enjoys all the wealth, the younger ones are obliged to retire into the monasteries and remain celibate (Handa 1987: 124). After the elder brother is married, he also takes over the charge of the ancestral house and land, relieving his father of the ancestral property. He then becomes *dak-po*, that is, the owner. The old parents are obliged to retire to a small house, known as the *khang-chung*, that is, the small house, generally adjacent to the *khang chen*, the big house. *Khang chung* is the permanent home of the old parents. Thus, in the ancestral house, only one small family of the *khang chen-pa* lives at a time.

This time-tested customary arrangement has so far worked out well for having evolved out of religious-economic compulsions; it has sustained Buddhist society in the most hostile living conditions for centuries. Arable land to support even a modest population in this trans-Himalayan sterile snow-desert has never been adequate. In the prevailing arid and arctic conditions, the terraced fields on the flat stretches in the valley areas can only be irrigated by the snow melt that flows in countless rills during the brief summer months to reap only one crop in a year. Within these constraints, the *bTsun-gral* (the system of the elder brother inheriting the family wealth) has been

the only workable and pragmatic solution to keep the integrity of landholdings. To ensure that the younger monk-brothers, who are obliged to subsist on the frugal monkish fares, are not deprived of their ancestral resources, the *khang chen-pa* provide for their maintenance. Thus, they are never a burden on the *khang chen-pa*. With the majority of male population becoming celibate in the monasteries, and the institution of nunnery not adequately developed, there is a surfeit of eligible young girls. Under such circumstances, polygamy has been common among the *khang chen-pa*, and even the monks have been becoming householders.

However, under the changed socio-economic scenario, many young boys and girls are getting higher education in the secular institutions in the area or outside. Thus, instead of embracing monkhood, more and more young people are seeking better jobs around their home and outside, maintaining their own households. This has not only reduced the pressure on the monasteries, but also considerably reduced the number of unmarried girls and the instances of polygamy. Many lay brothers are now free to set up their own households at the places of their postings, without becoming a burden on the ancestral property, which the eldest or any of the other brothers staying back home can enjoy.

The Gara and Rangoli terrains of the Lahul region and Spiti Valley are at a higher elevation in comparison to the Pattan Valley. These areas are rugged, difficult and oppressive, with very inhospitable climate for most of the year. Added to these natural adversities, no building material except earth and the conglomerate deposits of shale, lime and sandstone are available here. Situated in such an arid zone, the Spiti region has very little vegetation. It is a typical windswept highland snow-desert, where people build their houses against extreme natural odds, virtually with only earth, with no timber of any description available around. Any type of vegetation – roots, undergrowths, twigs, bushes and leaves – are precious building materials that substitute for wooden planks for flooring and roofing. For joists, beams and posts, people generally use skinned, but unhewn trunks of poplars (*Populus ciliata* Wall. and *Populus nigra* L.). For this purpose, people grow their own poplar trees on their lands.

Under these precarious conditions, one can hardly think of the finer aspects of planning and designing a house. The only guiding criterion is the protection of humans and animals against natural odds and ample storage space for fodder, food and *chhang* – homemade liquor of barley. Therefore, hardly any consideration is possible for architectural refinement and even for structural symmetry. It is rare to find a wall in

proper plumb or in a straight line or a room with corners at right angles. No wonder then, that even a wall of the upper storey may be found resting on the fragile floor, without a wall underneath. Such structural anomalies are common features of the houses in Spiti, rarely found elsewhere in the trans-Himalayan region. For the study of such a house, the author selected the traditional house of one of his Spitian friends, the late Namgyal Dorje of Village Hansa. He still cherishes the fond memories of his stay with him at his house at Hansa about three decades back. When the author visited Hansa last, his friend had passed away. His son was living in that house, which was still intact.

Namgyal Dorje's house is a typical traditional Spitian house located at the Village Hansa. Situated amidst a cluster of houses on a level stretch, Hansa, like most of the other villages in that valley, is a sizable village of the Spiti Valley. The main Kaza-Kunzam road passes through the middle of this village, dividing it into two almost equal parts. Laid out in a quadratic formation, on one of the bypaths of the village, the house faces east. Towards the south, attached to it is a large fenced open yard, (*nin-pa*), used for tethering animals under the sun and during most of the summer months (Figure 4.6).

The ground floor of this house is almost entirely used for penning (*tangra*), located towards the left of the central large room that serves as a lobby (*chbinga*). All the rooms on the ground floor and upper floor are entered through the *chbinga*. Towards the right are the rooms for storing fodder (*tarab*) for the animals. Behind the *chbinga* is a large winter living room (*gunsa*). Usually the family spends most of the winters in this room, which is kept warm by the central fire of the *tandoor*. The proximity to the animals also lends comfortable warmth to the winter living quarters. On the right of the *gunsa*, are the two small rooms, one of which is used for storage of *chhang*; the other small room is the household storeroom or *dzod*. On the extreme eastern corner is an enclosed small room, with a tiny door towards the north. In this room, the night soil is collected from the *chhara* (dry toilet) on the first floor. That room is located in an isolated corner so that the foul smell emitting from it does not enter the house.

To support the floor beams over the rooms with larger spans, wooden posts are erected in the middle. Thus, there are four such posts in the middle of *gunsa* and *chbinga* and two in one of the *tangra*. From the passage that leads from the *chbinga* to the *dzod*, a mud-and-stone winding ladder leads to the first floor. There is no window on the ground floor and fresh air comes to the rooms only through the narrow doors.

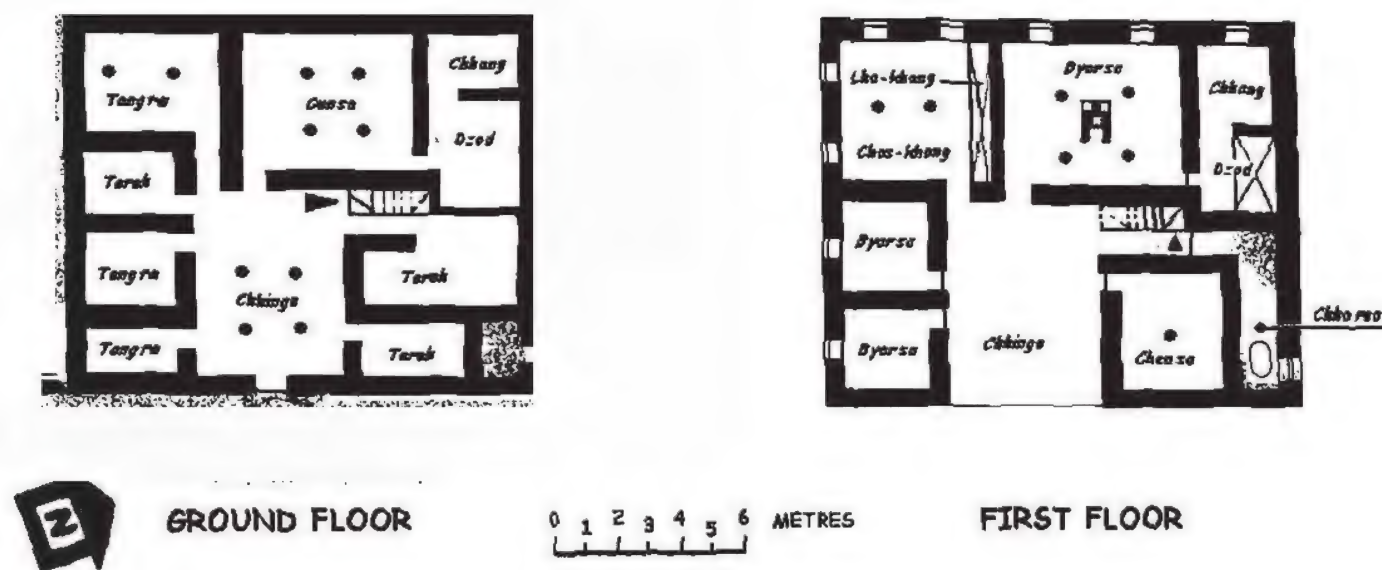


Fig. 4.6: A typical Spitian house at Hansa

However, all the rooms are accessed through the *chbinga*, which has only one entrance door and no other opening. Thus, these rooms remain only dimly lit even in the afternoon hours. The inmates feel that they can manage with the subdued light, but cannot stand the marrow-chilling cold of the winter.

To keep the ground well-insulated against the freezing winds and to withstand the heavy wind pressure from the northern and western sides, the mud-built walls on those sides are as thick as 90 cm to 120 cm, while the other external walls and most of the load-bearing walls are between 70 cm to 90 cm only. The partition walls are made of mud, reinforced with twigs knotted to form crude netting and placed vertically in position.

From the ground floor, one reaches an open and airy terrace (*tang-sa*) over the *chbinga*. The *tang-sa* faces east and receives plenty of morning sun. A door to the other room is provided from the terrace. Towards the left of the *tang-sa* are two living rooms (*byar-sa*), where the family sleeps during summer. Next to the *byar-sa*, on the southwestern corner is a spacious room, called *chos-khang* or the prayer room with an elevated altar (*lha-khang*) in it.

The *chos-khang* is the most important part of the house, wherein Namgyal Dorje stocked all his precious possessions – priceless images of the Buddhist deities, made of metal, sandalwood, and so on. The walls are full of precious *thangka*, suspended from the knobs in many layers. On the floor, the finest types of artistic Tibetan carpets are spread. Namgyal Dorje collected these treasures from Tibet and the Indian mainland during his numerous pilgrimages. The author had the privilege of spending many nights in that room. Next to the *chos-khang*, there is a large *byar-sa* used as a multipurpose living room. The central fireplace in that room is used for cooking meals and for heating. Interconnected to that room is a storeroom and a small room, wherein *chhang* is stored. On the right of the *tangra*, is a spacious *chensa*, which is generally used as a guest room. From the *tangra*, a passage leads to the *chbara*, the dry toilet. In one corner of *chbara*, a heap of earth and husk is deposited. Located on the extreme northern end of the house, the *chbara* is very wisely isolated from the living area. The rooms on the first floor are well-ventilated and lit with numerous windows, provided on the south and west facing walls. Most of the windows are fitted with glazed shutters.

From the *tang-sa*, one can climb to the roof by placing a portable ladder – a notched log – against one of the walls. Such notched ladders are known as the *chapna* (known as *shairta* in the Chuhara Valley). When roots, shrubs, and so on, are to be spread on the roof for drying, the *chapna* is used to climb.

The house of Namgyal Dorje is certainly one of the better planned houses of Spiti, with neat arrangement of rooms based on functional considerations. However, it scrupulously follows the traditional parameters not only in layout and design, but also in the selection of construction material. The staple construction material is earth, with use of rubble stone only up to the plinth level. Most of the woodwork is of the unhewn trunks and branches of poplar, but the door and window frames have been made of *kail* and pencil cedar wood procured from outside. Thus, despite its improved planning it hardly differs much from the other traditional houses of Spiti. For the sake of comparison, let us refer to what Harcourt (1972: 48-48) observed about the traditional houses of Spiti about 150 years ago. He notes:

The Spiti house is far from an uncomfortable one, and is both roomy and spacious; few of the villages are of any size, but even in the smallest the poorest classes are lodged in residences that are far from contemptible, and that are very solidly put together. That care in construction is necessary in a country where the climate is so rigorous for the greater part of the year. At Losur, I put up in a *Zemindar's* house, which may be taken as a sample of the style of dwelling in common use. The one in question occupied an area of some forty square feet, the entrance being by a strong, though low, wooden doorway, a flight of stone stairs leading to the family rooms up above, very clean and commodious stalls being reserved underneath for the cattle and sheep. The upper storey was composed of a court walled in, the third of which was roofed, and off it lay a spacious apartment furnished with small windows, protected by wooden shutters the roof being supported by uprights from the flooring, which, I should add, was scrupulously clean. When Mr. Egerton was in Spiti, he went over to a *Zemindar's* house and writes of as follows: 'The upper storey consists of three large apartments, all opening on the courtyard or balcony. The outer room is the one usually occupied by the family, and here were the hand-mill, the water-pail, pestle and mortar, tea-pot, and other domestic utensils, and the store of parched barley. The room on the left is the dining-room, and is hung round with the best clothes of the family, including sundry cloaks of white sheep-skin. The apartment on the right is the chapel or oratory. In this are the images of Lhooang and Losodong, the popular god and goddess, which, unlike the Hindoo goddess Doorgah, are both beneficent deities. In front of the images is a row of some half-dozen little brass basins full of water, ranged on a shelf at their feet, and a short way off several lamps, small vessels filled with melted butter, with a bit of cotton wick, and by the side of the images were some

goodly lumps of butter for replenishing them.' The walls of a Spiti house (which is often three storeys high) have generally the first three or four feet of stone, and the whole of the remainder of sundried bricks a foot and a half long, eight inches wide, and six deep, cemented together with mortar. In no case are the roofs sloping and this more probably from the difficulty in procuring timber than any dislike to that style of architecture, or necessity for the flat roof, which is universal. Across the walls, solid beams of the width of the apartment are placed, and willow or sticks peeled of their bark form the connecting links, tamarisk twigs and earth being placed over the surface and evenly smoothed down: this description of roof in such a dry climate answers all protective purposes. On the top of the roofs are ranged great layers of brushwood for winter consumption, and in, some of the houses long poles are inserted in the walls, from which flaunt out black yaks' tails. The smoke from fires colours the ceilings a deep coal-tar hue, for chimneys are no part of the Spiti householder's domestic economy. The upper portions of the walls are daubed on the outside with grey-coloured marl, and by way of ornament, broad, irregular bands of red and chrome are traced just under the line of the roof and round the windows. By each house is the open walled-in enclosure for yaks or ponies.

A Spiti Village of the larger type exhibits bustling activity. Sitting in an upper room, one looks out over a steep descent covered with houses, each roof having its dried rose-wood and grass neatly arranged, something in the form of an abattis. The windows of the houses are small, and their shutters are painted in red and deep blue, but with no pretensions to aesthetics. Tier after tier the roofs descend, and both on them and in the narrow and deep pathways, are a number of men and women and children; the various enclosures filled with ponies, sheep, yaks or goats. On an adjoining housetop may be noticed women lying down in easy attitudes, while their hair is decorated by their friends in multitudinous braids. Just below are two *Lama* (boys) in ragged red coats helping an old dame with a load of fire-wood. Some other lads surround a venerable old Tibetan, probably a wanderer from Lhasa or Shagatze, who twirls his prayer-wheel with one hand, and with the other enforces the point of his argument on his auditors. Further down, sitting under the shade of a huge rock, are several of young ladies, weaving *puttoo* and blankets, or carrying on a conversation in light banter with their friends who have stopped to rest. In short, the whole village seems to be bustling with activity, though life does not appear to be hectic.

A TYPICAL HOUSE IN LADAKH

The geophysical and bioclimatic conditions in Ladakh are similar to that in Spiti. The people of this trans-Himalayan region belong to the same ethnic stock, profess the same religious faith and live under the same socioeconomic conditions as the Spitians do. Obviously, the layout, design and functional parameters of the houses in Ladakh are just the same, but most of the houses in Ladakh, in the proximity of its capital town Leh, are much larger and better appointed. Ladakh has been the most important and influential kingdom in the trans-Himalayan region, connecting the trade marts of the Indian mainland with that of Central Asia and Tibet. Obviously, the people of Ladakh are economically better off than the Spitians. The prosperity is well-reflected by the size and decoration of their houses, most of which are stocked with a variety of religious and artistic objects. William Moorcroft and George Trebeck (Moorcroft and Trebeck 1989: 316-319) visited Ladakh between 1819 and 1825 CE. How the local houses around Leh, the capital city of Ladakh, looked can be visualised from their account:

The streets are disposed without any order and form a most intricate labyrinth, and the houses are built contiguously, and run into each other so strangely, that from without it is difficult to determine the extent of each mansion. The number, it is said, is about a thousand; but I should think they scarcely exceeded five hundred. They vary from one to two or three stories in height, and some are loftier. The walls are in a few instances wholly, or in part of stone, but in general they are built with large unburnt bricks: they are whitened outside with lime, but remain of their original colour inside. They are usually furnished with light wooden balconies, the roofs are flat, and are formed of small trunks of poplar trees, above which a layer of willow shoots is laid, which is covered by a coating of straw, and that again by a bed of earth. In rainy weather, this is a very insufficient defence, as the water soon softens the earth, and pours down into the apartment: the stairs are formed of rough stones. The rooms, though frequently of good size, are low, rarely above seven or eight feet high, and the ceilings are made like, the roof, of poplar beams, supporting slender willow or laths, sometimes peeled and laid close together, and covered with earth. In the houses of the poorest classes, the roofs are commonly made of branches of poplar, with the leaves on. In those of persons of rank, as the Raja and Khalun, the ceiling is of wood, arranged in squares or lozenges, stained and painted. The

main rafters are supported by cylindrical or square pillars of wood, the top of which under the truss, is in the houses of the peasantry encircled by a band of straw and ears of wheat, forming a primitive sort of capital. It is the custom, I was told, to consecrate the two or three first handful each year's crop to a spirit who presides over agriculture, and these bands are thus deposited: sometimes rams' horns are added to this decoration. The top of the pillar is everywhere carved into the form of hatters' blocks one inverted on the other, and separated [by] a circular ridge; and in the houses of sons of distinction, carved, painted, gilded, as are the trusses between the capital of the pillar and the beam. The most considerable building in Le' (Leh) is the palace [of], the Raja, which has a front of two hundred and fifty feet, and is of several stories in height, forming a conspicuous object on approach to the city. This, as well as the houses in general, diminishes in extent as rises, and the whole town at a distance has much the appearance of a cluster of houses of cards. The temples are built of the same materials as the houses, and pillars of timber, like those in private dwellings, support the beams which are in fact the stems of willow or poplar stripped of bark and painted. None of the houses have any mode of excluding the weather, except by curtains suspended before large open windows in the balconies, or shutters closing small slits or loop-holes in the walls; nor are the rooms provided with chimneys, and the smoke from the wood fires is not only offensive and suffocating, but often productive of lasting mischief to the eyesight. In the kitchen, there is sometimes a square hole, which acts as an imperfect ventilator. The doors are made of planks of poplar, mortised together: iron nails are rarely used, as they are too costly, for although there is plenty of the metal, it cannot be wrought for lack of fuel, and such iron implements and utensils as are used are of foreign importation. A few felts and sheep-skins, and a bench or two with a large box, constitute the principal articles of furniture. The floor serves as chair, table, and bed, and is not infrequently shared with sheep and goats, and swarms with more exceptionable tenants.

There are no significant changes in the design, form and function of the houses since the visit by Moorcroft and Trebeck. However, in the post-Independence decades, especially after the inner line restrictions were revoked and this borderland was opened for commercial tourism, most of the houses around Leh have virtually turned into guest houses. These guest houses have been refurbished exotically to attract the tourists, mostly foreign. However, most of the houses in the interiors have retained their traditional fervour and nostalgic charm until date.

For this study, the author selected a typical house at one of the monastery villages – the village of Tikse (Figure 4.7). This village is located some 17 km upstream of Leh on the right bank of the Indus on the road that leads to the famous Hemis monastery. The village is spread on a sprawling undulating land and the slopes of the hillock on which the magnificent fortress of Tikse monastery is perched. Because of this monastery, this village attracts a large number of local and foreign tourists, especially during the annual thanksgiving festival, called *Khing-rtse dGu-gtor* or *Tikse Gustor*, that is, the Annual Offering of the Sacrificial Cake at Tikse that is held from the seventeenth to the nineteenth day of the twelfth month of the Tibetan calendar.

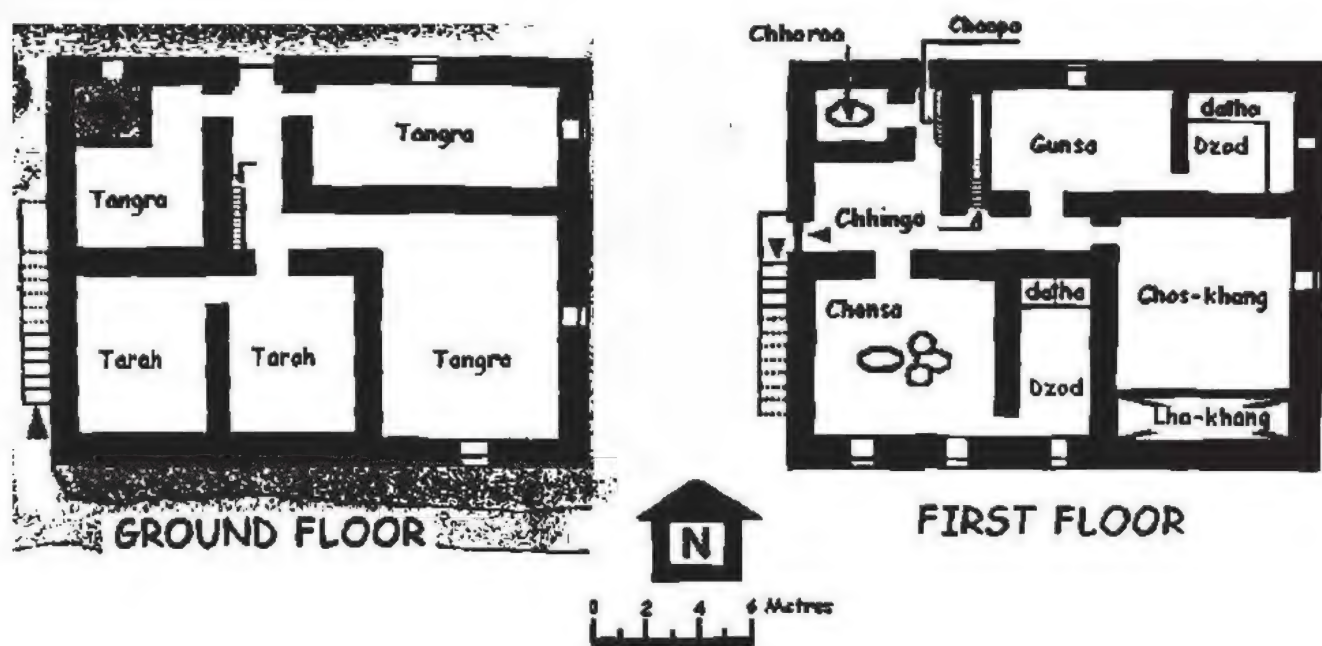


Fig. 4.7: A typical Ladakhi house at Tikse

The selected double storeyed house in this village is mostly built of mud. However, unlike the Spitian houses, this house is built immaculately with well-defined outlines. Situated on the side of a village path, a private approach leads to the house on its right and ends in the open backyard, defined by a mud-and-stone boundary wall. This backyard or *nin-pa* serves as a barn (*nin-da*) for the cattle during fair-weather conditions. Entrance is also provided from this backyard to the cattle shed (*tangra*) and to the fodder-fuel storage. The opening for the clearance of night soil is also provided at the back. This planning and arrangement of the ground floor is very ingenious; the

backyard takes care of the messy part of the house, keeping the rest of the house free from smell of dung, and heaps of grass and fuel wood. An internal narrow staircase is provided from the ground floor to the first floor so that one can reach the ground floor comfortably from the upper living floor even during inclement weather and at night. The notable feature of this house is an internal notched ladder or *chanpa* that leads to the roof, where fuel is piled on the edges for drying. The opening on the roof is wide enough for one person to move freely, but so narrow that it can easily be covered with one flat stone. During the winters, the entire house can be closed and insulated from external chill by closing the main door of the first floor. Thus, this house, with thick rammed earth walls, is not only comfortable and cosy, but also well planned, with an eye for cleanliness in the trans-Himalayan environment. The author was told that a local NGO named 'Rural Development and You' and the Chandigarh based 'Environment Society of India' had started an awareness programme at Tikse. It is likely that their activities have contributed in improving upon the traditional planning concepts of house construction.

From the private pathway on the right, a staircase leads to the enclosed lobby (*chbinga*) through the main entrance. Once this door is closed, the house is completely closed to the outside. On the right of the *chbinga* is the *chbara* (dry toilet) to which an indirect approach is provided from the passage, where, on one side the *chanpa* (notched ladder) is access to the roof. On the left side of the *chbinga* is the main living room – the *chensa*, where a smokeless *chullha* is installed. The family members dine and sleep in that room. Attached to that room is the storeroom. In the *dzod*, storage silos (*dotha*) are provided to keep the different food items separate – sacks of *saktoo* (flour of coarse barley), grains and dried meat (*shakpo*), vegetable, and so on. From *chbinga*, a passage leads to the rooms at the back. From the left side of that passage, a narrow stair goes to the ground floor, where the cattle are tethered and fuel and fodder stocked. On the left of that passage is another room, known as the *gunsa* or the winter living room. Attached to the *gunsa* is the other *dzod*, fitted with the *dotha* for storing *chhang*. This *dzod* has a very small ventilator-like opening; probably *chhang* is stored best in the dark. The large room on the back is the *chos-khang* – the family prayer room. There, on an altar (*lha-khang*), objects of worship and other votive objects are placed.

While there are only a few openings on the ground floor towards the front of the building facing the village lane, the upper floor is well-lit and ventilated with the windows fitted with glass panes. The rammed earth walls of the superstructure, 60 cm

to 90 cm in thickness, are raised on the random rubble stone masonry laid in mud mortar up to the plinth level, slightly above the ground level. The low plinth height is understandable, for it may be very difficult, even risky, for the yaks, *dzo*s, and *dzomo*s (the crossbreed of cow and yak) to climb a higher plinth.

A TYPICAL HOUSE AT ZANSKAR

Even a fleeting thought of Zaskar conjures up an image of a rugged landscape, rather a 'moonscape', glaciated tundra with howling winds and freezing cold. Zaskar, sometimes misspelt as Zaskar, means the mysterious land of white copper. Mysterious it is, for, perched at a staggering average height of 4000 m, Zaskar Valley (Peissel 1979: 11) is 'surely one of the most inaccessible and highest valleys of our planet' that has so far remained the least explored tract in the trans-Himalayas owing to its landlocked and perilous location. The two rivers, the Doda (*dPon-rtse-chu*) from the northwest and the Lingti (*Lingti-chu*) from the southeast join about 4 km below Village Ubtu, to form the turbulent and formidable Zaskar River that flows in a north-easterly direction into the Indus, digging a 240 km long canyon, too deep and treacherous for one to penetrate. The only access to this *linga* (that is how the isolated and hidden land is known in Bhoti) is either across the passes on the Great Himalayan Range, the lowest of which is 6000 m high, from the valleys of the Bhaga or Chandrabhaga or if one follows the uncharted tracks across the arduous 'Zaskar Range.

For the present study, the author could not dare venture into that *linga* and depended on observations and notes that were prepared years ago. The house at Village Zangla on the right bank of the Zaskar, where the author stayed, is an old Zaskari house, built of rubble and mud. Surely, things have not changed much in that valley, where life remains frozen for almost eight months in a year. The village lies on a plain stretch at the edge of a glacial torrent against a sweeping scree slope of loose stones. A line of *chorten* define the approach leading to the village through the green fields, irrigated by the channel-system laid out by these hardy people. Therefore, the village presents a vivid picture of a green oasis amidst the barren and rugged towering cliffs. On one such staggering cliff stands the ancient fortress of the kings of Zangla.

Towering high above the village, the fortress is now much weathered and gloomy, yet it looks incredibly menacing. The renowned Hungarian Tibetologist, Alexander Csoma de Koros, stayed in that fortress from June 1823 to September 1824. A memorial stone

commemorating his stay still exists at Phugthal *gompa*. On the eve of the centenary (Handa 2001: 65) of Koros's stay in Zanskar, a plaque was placed at Zangla announcing, 'Csoma de Koros lived here, Pioneer of Tibetan Studies'. At the foot of the royal fortress, on the undulating stretch, there are nearly one hundred large and small houses in the village. All of these are double storeyed or more, as in the rest of the Zanskar Valley. These have whitewashed, flat exteriors against which the symmetrically arranged windows rimmed by black strips, look like fortresses rising one above the other. The effect is heightened manifold by the sloping mud or mud-brick walls, founded on the rubble stone substructure.

The Zanskari house (Figure 4.8), like the other trans-Himalayan houses, has at least *two functional floors* implying that a house must be at least a double storeyed structure. The ground floor is essentially for cattle, but the core part of this floor also serves as the winter living area for the family. The floor is partly sunk underground and half of it is buried in the mountain profile at the back. Thus, it remains naturally insulated from the chilling winds. The core part that serves as the winter living apartment (*gunsa*) is surrounded by the outer rooms, where the goats, sheep, yaks and ponies, and so on, are tethered. These rooms are only entered through the low-set door to maintain and preserve the warmth of the internal micro-atmosphere. The low-set door of the living room also ensures that no direct draught of chilling air enters from outside. A separate pitch-dark room on the extreme end of the house is reserved for *chhang*, for the *chhang* ferments best in a dark and cosy cellar. There is no window on this floor, and the glimmer of light that it receives is from either the smouldering central fire or a tiny opening on the ceiling that admits light from the *chhinga* on the upper summer living floor. That sets the Zanskari house apart from the rest of the trans-Himalayan houses, where the ground floor is generally used for tethering cattle. Thus, the living room is kept warm exclusively by animal and human warmth. Only by burrowing underground into the core part of their dwellings, can the Zanskaris escape the harsh winters.

The Zanskaris shift to the upper floors during the brief summers. On that floor, a central open terrace (*chhinga*) is a common sight. All rooms on the first floor are approached through the central terrace. Since the houses are partly sunk into the mountain-profile, the approach to the upper floor is normally provided from outside. However, an internal rubble stone staircase or stepladder is also provided. The other peculiarity of the Zanskari house is that the fuel-devouring smokeless *Labuli chullha* or *Ladakhi chullha* is conspicuously missing here. Fuel is extremely scarce here. Wood

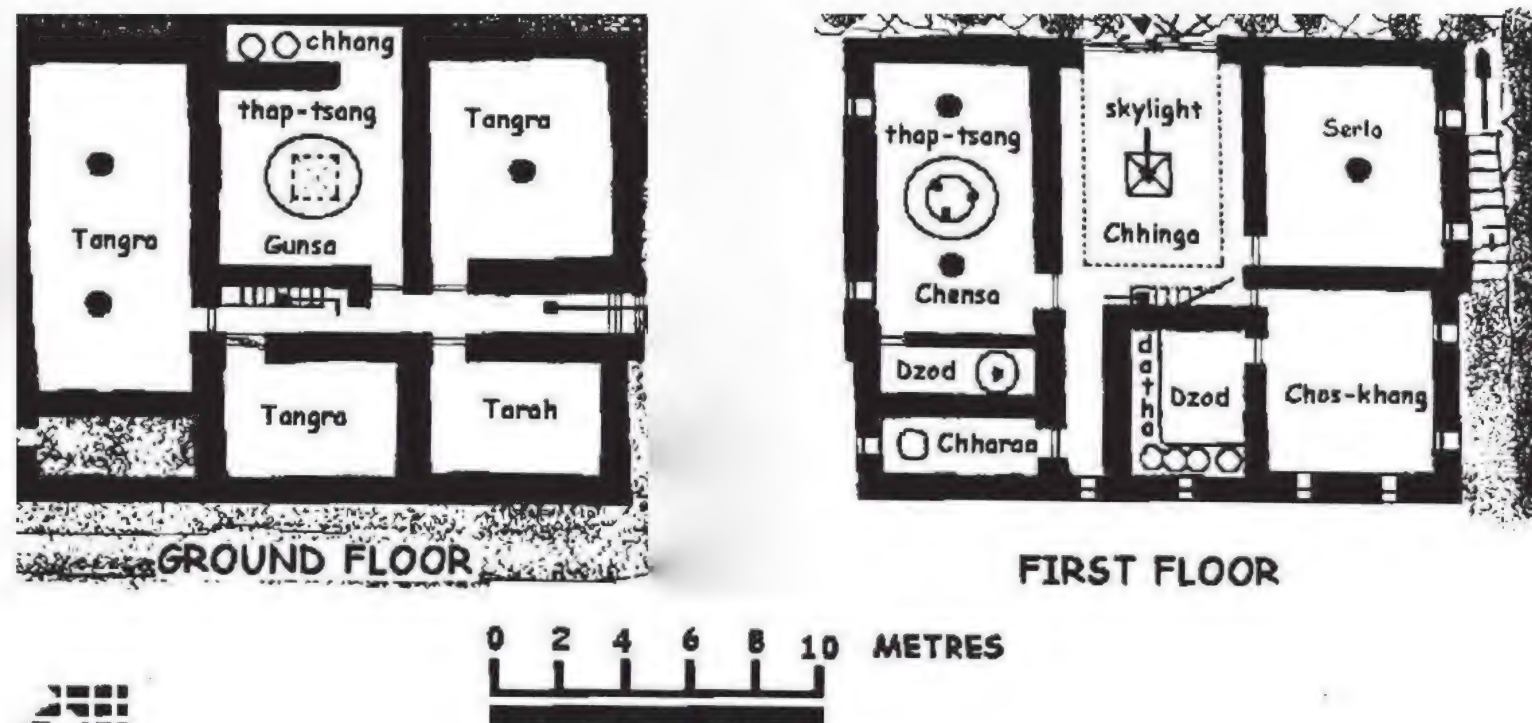


Fig. 4.8: A typical house of Zanskar at Zangla

of any type, not even bush wood, is available. Therefore, animal dung serves as the most important fuel. People make small dung cakes and pile them on the flat rooftops together with any type of bush, and hay to feed the cattle, sheep and ponies during the long winter months. The housetops stacked with all types of roots, twigs, brushwood, dung cakes, and so on, is a common sight in Zanskar.

The house at Zangla, where the author stayed is a double storeyed house. A trench-like entrance to the house is provided from the northeastern side. To enter the ground floor, one has to go down a couple of steps from the ground level to reach the sunken floor level. A climb of a few steps leads one to the first floor. Its ground floor, partly sunk underground and partly buried in the mountain slope, is used for tethering cattle. The winter living room (*gumsa*), located at the heart of the building, is a spacious room with a central fire and cooking stand (*thap-tsang*). Exactly above the *thap-tsang* is the skylight that opens to the *chbinga* into the upper floor. That skylight not only admits sufficient light into the room, but also acts as an effective outlet for the smoke that keeps rising from the smouldering fires. Thus, this room remains smoke-free, reasonably lighted, comfortable and cosy, which is accentuated by the attached cellar, where *chhang* remains always handy. An internal stone staircase leads from the passage of this floor to the upper floor (Figure 4.8).

The external steps from the left side of the house lead one to the back, from where one enters into the *chbinga*; the central courtyard opens to the sky. An internal staircase from the lower floor also terminates in that courtyard. This floor is the summer residence of the family. On the left is the *chensa*, that is, the summer living room. A central fire with cooking stand or *thap-tsang* is placed in the middle of this room. Attached to this room is the *dzod* – the storeroom. Opposite the *chensa* is the *serla*, another family room. Next to the *serla* is the modestly decorated family prayer room, the *chos-khang*. Attached to the *chos-khang* is another storeroom (called *dotha*), with storage containers. In on the extreme southeast corner is the *chbara*, the dry toilet. The traditional wisdom in planning is well-reflected in the arrangement of different utilities around the central courtyard. All the rooms are independent and the *chbara* is so located in one corner that it is conveniently accessible. The central open courtyard adds to the charm of living on this floor during summers. The rooms are airy and well-ventilated.

The Zanskaris, like the Spitians, do not bother about the accuracy of layout, nor are they much concerned about the size and shape of their rooms. The only consideration for them is protection from the freezing cold and stability of the structure

to withstand the howling winds, heaps of snow and occasional avalanches. The unduly thick mudbrick walls found on the rubble stone substructure and the partially buried and partially sunken structure take care of such eventualities. Wood is extremely scarce in this area. Therefore, people make use of any available type of wood for structural purposes. They use unhewn logs for posts and beams, and all types of brushwood for laying the flat mud roofs; the only consideration is that it should withstand the dead weight of heaps of snow that accumulates over the roof during winters. It has to be shovelled away with a wooden shovel-like implement or *woll* from the roof immediately, else it would turn into ice and set firmly and add to the dead weight.

From the foregoing discussion on the trans-Himalayan domestic architecture, it may become evident that there is a definite emphasis on the functional rather than aesthetic aspects. The box-like construction of houses and monasteries ensures structural solidity and stability of these against the fury of elements – howling winds and snow blizzards. The plain and flat exterior of these houses blend so inextricably with the rugged and stark natural surroundings, that from a distance it is difficult to identify which is which.

THE MEDIAEVAL KOTHI, KATHYAR, BHANDAR AND CASTLES

DURING THE MEDIAEVAL PERIOD, IN SOME OF THE KINGDOMS IN THE WESTERN Himalayan region, especially in the kingdoms of Chamba and Mandi, society remained stratified into feudal aristocracy, urban elite and agrarian rural folk. The creamy layer, constituting the feudal aristocracy and the urban or rural elite owned most of the agricultural lands. The rural peasantry tilled the lands on a crop-sharing basis. The 'landlords' used to visit their lands at harvest time and collect their share of the produce. For the storage of the produce, they had built secure warehouses in the villages, from where they could take requisite grains, pulses, vegetables, and so on, according to their requirements.

THE KOTHI, KATHYAR AND BHANDAR

Under their age-old system, the rulers of all the hill states used to receive revenue and other levies from the subjects in kind, for the common people rarely had money. Later, when the monetary system became popular, the state started realising revenue and other levies partly in cash and partly in kind. However, the earlier practice continued in some petty hill states, till they became a part of the Union of the Indian Republic. Thus, a good buffer stock of a variety of coarse grains (*koda*, *ogla*, *chalai*, *kulath*, maize, barley and so on), pulses, honey, ghee, and so on, was always in store with the state at

various collection centres. These coarse grains, though not very palatable, had excellent storage life. Interestingly, opium was considered the most preferred item of revenue collection in some states.

The rulers had also granted large land-holdings to different autochthonous gods and goddesses; the rural peasantry on a crop-sharing basis tilled such lands and the deities used to get their share of produce on every harvest. Besides, each native deity had his/her territory, where he/she reigned supreme. Customarily, each household within that territory, locally known as *bar*, is obliged to pay a tribute to the deity. That levy is known as *kaur* in the Mandi-Kullu area. The tribute paid to *Mahasu Devta* of Hanol is called *koot*. Generally, it consists of millets only. Thus, various kinds of grains and pulses always remain in the storehouses of these deities.

Under this customary practice, season after season and year after year, huge stocks of grains, opium, honey, ghee, and so on, had been accumulating in the storehouses of the native gods and goddesses, and rulers and landlords. These traditional warehouses of the Himalayan interiors have been known by different names, as *kothi*, *kathar*, *kathyar*, *bhandar*, and so on. Although all these buildings are essentially meant for storage, yet each of these have a specific character, function and architectural peculiarity. While the *kothi* and *kathar* signified feudal authority over the common people in various *paragana* of the state, the *kathyar* marked the ominous presence of influential landlords over the peasantry in the countryside. The *bhandar* have been the repository of the village community commonwealth and a symbol of people's faith in their community gods. Therefore, each of these deserves separate discussion.

The Kothi

The hill rulers had divided their kingdoms into different revenue units. Such revenue units were generally known as the *paragana* in various states, but in Chamba state, another name for the *paragana* was *kothi*. The headquarters of such revenue units was also known as *kothi* in Chamba. In the *kothi*, the *kardar* or the local chief executives of the state, had their offices. However, these *kothi* primarily served as centres for the collection and storage of the revenue exacted in kind from the subjects. The *kothi* were essentially large and pompous wooden buildings, located strategically amidst the peasantry houses in the central villages. These were two or three storeyed large mansions, laid out on a square plan, measuring about 18 m to 28 m on each side to conform to what is known in vernacular parlance as the *chowki*-type layout. These mansions had rooms with a

running veranda (*dalan*) on all sides with a large square open courtyard in the middle, from where a staircase was provided to the upper floors. From one side, an entrance was provided to the interior through an anteroom, where a guard was posted. There was no other door or window in that building from outside, at least on the ground floor, to ensure security and safety. However, in some of them, projected windows were provided on the first floor for surveillance. Most of the rooms on the ground floor were used for storing grains and other commodities received from the people, but the first floor was used as the residence of the *kardar*. Part of the upper floor was used for storing valuables, such as honey, ghee, opium, wood, blankets, metal wares, musical instruments, and so on. Some of these *kothi* are ancient, dating back to the time of the Ranas. However, those of the later period were of small size, and consisted usually of few rooms in a linear layout with a veranda in front.

In the kingdoms and principalities of the Shimla Hill state, the chief functionary of the state in a *paragana* was known as the *rakha*. The *paragana* headquarters, where he lived and stocked grains and other commodities, including goats, sheep, and so on, as part of the revenue collection, was known as the *kathar*. The *kathar* were not as forbidding and such large structures, as the *kothi* of Chamba were, but humble double storeyed buildings like most of the peasant houses. Interestingly, some of those *kathar* on the pedestrian routes also functioned as hospitable, halting places for wayfarers.

Besides functioning as collection-centres for the state, these traditional *kothi* and *kathar* also served the cause of public welfare. In case of emergency or distress caused by epidemics or droughts in the area, the people were given food grains from the accumulated stock in these granaries. The people drafted for *begar* were paid in kind from the buffer stock in the *kothi* or *kathar*. Thus, old stock was occasionally cleared to be replenished in the following harvest.

There were numerous such *kothi* and *kathar* in the interior, but having remained in a state of neglect for centuries, most of these are desolate ruins. However, one such structure is still in a recognisable condition at Brahmaur in Chamba District. The building is known as the Kardar Kothi or the Brahmaur Kothi. The *kothi*, or whatever remains of it now at the site, may be one of the oldest relics of this house-type in the Himalayan interior, dating to the times of the Ranas.

In its spruced up condition, in which it existed until the sixties of the last century, the Kardar Kothi is ascribed to Raja Prithvi Singh (1641-1664 CE) of Chamba (Vogel 1909: 34-35). That mansion, built in the traditional *chowki*-type layout, in the timber-bonded rubble stone masonry walls laid in mud, was once regarded as the most

pompous secular structure of the Gadderan area, the homeland of the Gaddi; however, the Gaddi deserve no credit for it for certainly it was not built by them. In the early sixties, when the author first saw this *kothi*, it had a very elegant façade, with elaborately carved woodwork. Even the fluted veranda posts inside were stylistically carved and so too, were the abaci treated. In all probability it was built by a team of non-Gaddi *thawin* of Chamba in the local feudal architectural style. The Kardar *Kothi* contained some of the finest figurative woodcarvings, depicting feudal aristocratic characters of the later mediaeval times. One of the successors of Raja Prithvi Singh, Umed Singh (1784-1764 CE), is also known to have provided some carved wooden ceiling panels and a door to the original building. In that context, the author came across the name of an accomplished woodcarver of Chamba, named Chetru, who carried out some (if not all) of the structural woodcarving work in that building. However, Ohri (year unknown, Vol. 38: 116) is of the opinion, 'the greater part of the work was done by Muslim artisans and the work of Hindu mythological figures was done by local Hindu artisans'. To support his assumption, he cites the use of cusped arches, geometrical motifs and an isolated winged figure as evidence.

However, these elements in woodcarving in no way establish the presence of the Muslim artisans (*ustad*) at Brahmaur, for the local non-Muslim artisans, trained under Muslim artisans, were freely using Muslim decorative architectural devices in those times. This fact is well-reflected in the Pahari miniature paintings, murals and temple architecture, which have exclusively been the work of Hindu artisans. The delicately carved ceiling panels and the entrance door shutters, depicting feudal characters in the cusped arches, clearly reflect the influence of Mughal art on the art tradition of Chamba. Among these, the carved wooden panels in the porch of the *kothi*, represent Hanuman, Sita-Ram and Lakshman and are set in three cusped arched-frames, which is interesting. The other similar panel in the porch depicts Shiv, Brahma and Vishnu, each set in the separate cusped arched-frame. In the third similar panel, Goddess Kamala is depicted.

There are a few other panels of the Kardar *Kothi*, now preserved at the Bhuri Singh Museum, Chamba. The panels, stylistically influenced by Mughal miniature painting, depict different feudal amorous themes. However, of greater interest is the door-shutter of the Kardar *Kothi*. In the separate cusped arched frames of these shutters, four persons dressed in typical Mughal attire are depicted. The two figures on the top panels represent the royal personages. The one on the left, holding a fish in his hands, has been identified as the young Raja Prithvi Singh, who held a *mansab* in the Mughal

army. The one on the right, holding a hawk on the forefinger of his right hand, may be a Muslim prince, as the style of wearing the *jama* and other accessories suggest. One of the two figures on the right in the lower panels possibly represents a noble of Raja Prithvi Singh's court. He is shown holding a flower in his right hand near his nose. The other on the left may be Raja Prithvi Singh's attendant.

Chetru, the woodworker and carver, probably belonged to the family of traditional painters and woodworkers of Chamba. That may explain the miniature painting-like effect on his style of woodcarving. The woodcarvings of Kardar Kothi are unique examples of carved woodwork in the secular structures at Brahmaur, for no such tradition of woodcarving existed in Brahmaur, nor is there any evidence of the art woodwork done by the local artisans in the local residential houses in the entire area. The Kardar Kothi suffered extensive devastation in the Kangra Earthquake of 4 April 1905 (Vogel 1909: 34-35). It remained in a dilapidated condition until it was renovated and rebuilt in the 'modernised' form, in which it now stands. The carved wooden panels (Figure 5.1) and other architectural members of the earlier structure were removed to the Bhuri Singh Museum at Chamba before vandals could lay their hands on them.



Fig. 5.1: A panel from a carved wooden ceiling from Kardar Kothi at Brahmaur

The Kathyar

The *kathyar* largely followed the *chowki*-type square layout, but they were not as large and pompous as the feudal *kotbi* of Chamba. However, these were surely larger than the *kathar* of the Shimla Hill states. Most of the *kathyar* were single storeyed buildings, but a few of them were double storeyed. During the harvest time, the landlords used to come to their *kathyar* and stay there to oversee the harvesting, threshing and winnowing operations. They also visited their *kathyar* with their families on excursions. Therefore, the *kathyar* had all the facilities of a household, and remained well-supplied for the comfortable stay of the guests. With all those provisions, the *kathyar* looked like large urban residential houses, set in the rural environs. However, under the changed socio-economic environment, most of the *kathyar* have now fallen into disuse or converted into residential houses by the peasants, who now hold ownership rights of the lands that they once tilled. Many of the abandoned or converted *kathyar* are found at various places in the Mandi-Kullu area and in the Chamba District. For this study, one of the ancient *kathyar* was selected that has now been converted into a residential house in the Karsog area of Mandi District.

That *chowki*-type double storeyed building is now a residential house of one of the agrarian families, but the building stands in its original form. Built on a square layout, the building has three rooms on each side with a running veranda on both the floors. Entrance to all the rooms is provided from the veranda, though the rooms on the corners are interconnected. One side of the *chowki* is without rooms; this open space is known as the *naswal*. When the building functioned as the *kathyar*, the *naswal* was a very important area, where the grains were weighed and packed in sacks. Opposite the *naswal* on the other side, there is a room on the ground floor without a wall towards the veranda and is known as the *wan*. It has a sturdy and large door that opens outside; the door serves as an entrance to the *chowki*. On one side of the *wan* may also be seen an inbuilt box-type wooden settee, where the landlord or his assistant used to sit to prepare the inventory of sacks of grains received during harvest time.

On each side of the *wan*, there are small but sturdy doors, which open into the adjoining rooms, in which large and strong wooden boxes are placed. Those boxes, called *kotbad* or *kuthad*, were used to store processed grains. Such *kotbads* are found in most of the rooms, now lying unused. Traditionally, the wooden boxes meant to store food grains were made of walnut wood, horse chestnut wood, birch-bark, and so on. For the joinery work on these wooden boxes, neither metallic nails, screws or hinges

nor animal or synthetic glue were used. All the wooden parts were joined by firm and immaculate joinery: mostly by dovetailing, lap-jointing and pegging, and other techniques. The exterior surfaces of such boxes were engraved with auspicious devices, such as lotus, swastika, and so on. At times, geometrical patterns were also engraved on them. Such boxes may still be found in many traditional and old houses in the region. The wooden boxes meant to store woollen clothes, blankets, and so on, were preferably made of deodar wood, for the aroma of deodar wood not only acted as a repellent against insects, but kept the clothes fresh and fragrant.

The veranda on the ground floor encloses a square paved courtyard (*angan*) open to the sky. In the centre of the courtyard, an elevated square pedestal of stone, with a hollow space filled with earth, stands. Earlier, *tulsi* (basil plant) was planted in it, but it is lying neglected for decades.

The building has small ventilator-like grilled windows on the outer walls of both the floors, but there is no door on the outside other than the one in the *wan*. However, each room has a door and the usual grilled window towards the veranda. The other structural details of this *kathyar* are largely similar to the *chowki*-type house, discussed earlier in Chapter 2.

The Bhandar

The *bhandar* are multi-storeyed towering structures, standing like sentinels amidst residential houses in various villages in the interior. Even a double storeyed *bhandar* building is taller than the other residential buildings around in deference to its dignity and eminence. For that purpose, the plinth may be made abnormally high and the height of the ground floor may also be raised significantly. Shortfall, if any, is made good by the lofty roofing structure. The *bhandar* structure is normally laid out in a square formation. The solid timber-bonded stone masonry walls are taken to a towering height, where on the top floor, about one-and-a-half metre wide projections are extended on all sides by laying sturdy beams and joists. While the walls are being raised, the infrastructure of beams and joists for the intermediate floors is laid. Normally, a high-pitched composite pent-and-gable roof covered with fine shingles is provided, making the edifice look more pompous and tall standing amongst the residential houses.

The roofing infrastructure rests on the posts of the cantilevered veranda on all sides and on the load-bearing four walls. The cantilevered veranda may be covered completely or partly on all sides with deodar wood panelling. The outer faces of this

panel work are carved intricately and artistically with numerous geometrical, floral, faunal and figural themes. The wooden fringes, known variously as the *kharoori*, *gádudu*, *khururu*, and so on, at different places, and ornamental eaves boards are the other richly carved wooden elements of the *bhandar* building. On the four corners of the roof, elaborately carved wooden bells or lanterns (*ghanti*) are suspended to add an artistic touch to the edifice.

These fringes and bells are especially made of a particular species of wood, known as *dali* in the Mandi-Kullu area. The ridgepole (locally known by different names, *kurad*, *bandor* or *nala* at different places) forms a very important and sacred structural component of the edifice (Figures 5.2, 5.3, and 5.4). The head of the *kurad* is especially decorated with one of the many traditional devices, by which it is known. Thus, there is a *makar kurad*, shaped like the snout of a crocodile; *singh kurad* with a leonine head; *bath-sundi kurad* that resembles the trunk of an elephant; *mor kurad* sculpted like peacock; *garud kurad* that represents a falcon, and so on. However, among these, the *makar kurad* is most popular, possibly for the reason that the snout of the crocodile is most conveniently sculpted and carved on the long ridgepole. The sculpted end of a *kurad* extends to a definite length beyond the edge of the roof depending upon the type of device. It may be half a metre for *singh kurad* to one and a half metre for *makar kurad*.

Often the animal and faunal figures, made of wood, are fixed along the length of the *kurad*. Such sculpted avian figures, especially of peacock, crocodile and snake are quite numerous in the lower part of Kinnaur. In Hamal Valley of Chaupal in Shimla District, monkeys, carved in wood or stone, are also placed atop the *kurad*. Such wooden monkeys are also seen on the hip-ends of the *Maishur* temple roof at Sungra in Kinnaur. The author did not observe this practice elsewhere in the Himalayan interiors.

A small but sturdy and ornamental door is provided on the ground floor. The access to the intermediate floors, and the topmost sacred room, is provided by narrow wooden stepladders. The ground floor and other intermediate floors look dark and ominous in the dim light that comes through the small ventilators with grilles. In many cases the topmost floor, where the deity is enshrined, is accessed directly from the outside through a precarious and narrow wooden stepladder.

The *bhandar* is customarily located in the heart of a village, with sufficient open area around it and a paved spacious courtyard in front of it. The courtyard is a village square where all the social and religious functions are consummated. It is an age-old tradition in the hills that whenever a wayfarer stops at the courtyard, it is obligatory

for villagers to ask him about his whereabouts and extend hospitality to him from the *bhandar*.

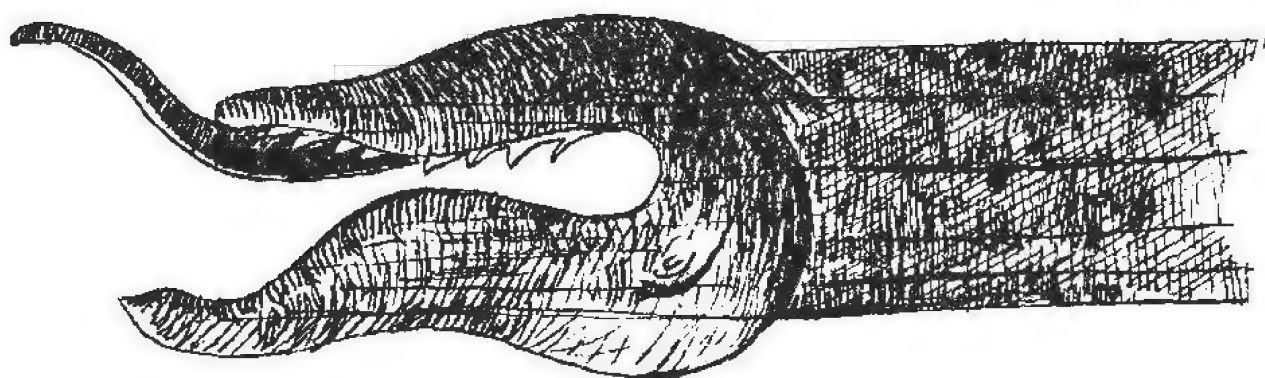


Fig. 5.2: The Makar Kurad

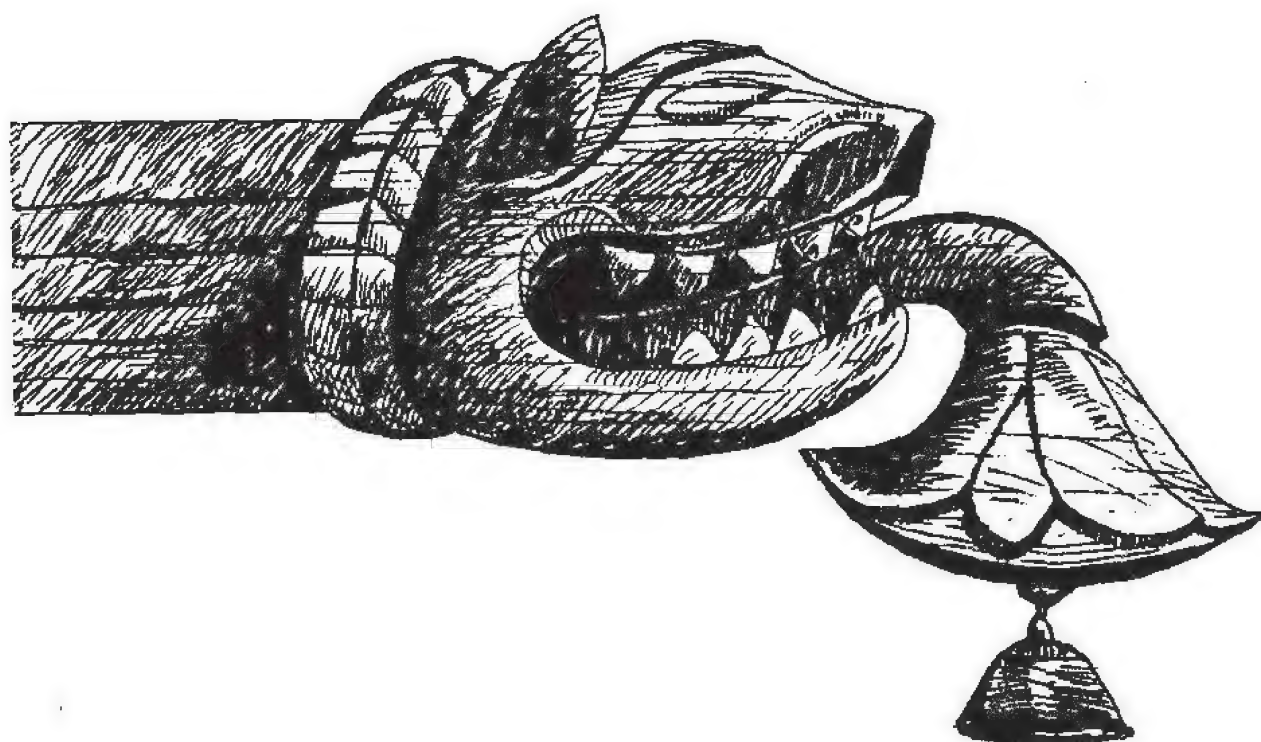


Fig. 5.3: The Singh Kurad

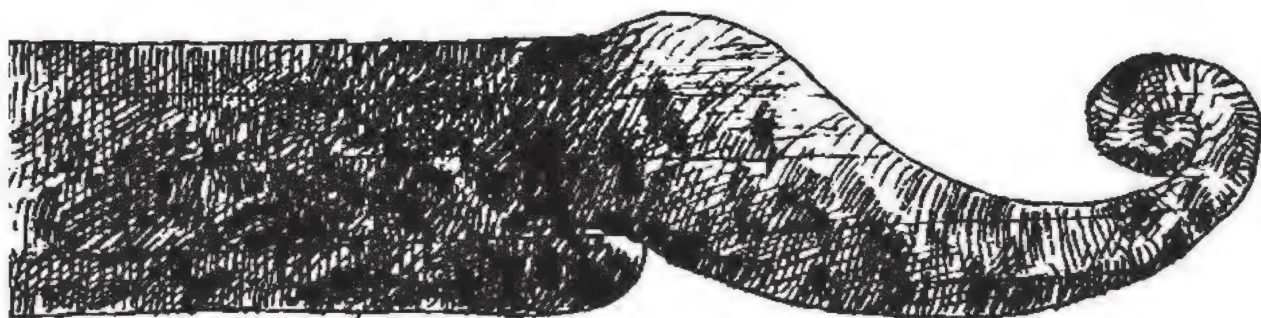


Fig. 5.4: The Hath-Sundi Kurad

In fact, the *bhandar* has been the hub of village community life, responding to the religious, social and economic calls of the community. Accordingly, the *bhandar* of the autochthonous gods and goddesses, mostly of ophiolatrous origin of the Himalayan interiors, have traditionally been serving two different roles and catering to two ambivalent imperatives. The towering structure of the *bhandar* is divided according to these requirements into two functional levels. The topmost floor is reserved as the sacred realm of the presiding deity, where the metallic trumpery or 'duplicate' images of the deity are enshrined on an altar.

The lower floor or floors are earmarked for the secular dispensations of the village community. They serve as the grains store, besides metallic vessels, musical instruments, and so on, are also kept there. Traditionally, the lower floors of the *bhandar* have served as community strong rooms and a repository of the village 'commonwealth'. During the pre-modern times, when the people lived together as an integrated village fraternity, most of the community property, weapons and valuables were kept in the *bhandar*. The location of the *bhandar* in the heart of the village ensured constant vigil and security. These *bhandar* are some of the most magnificent and profusely carved edifices of popular faith and certainly among the best examples of the vernacular wood-based *Pahari* architecture.

Sanctified by tradition and ordained by usage, the essential architectural characteristics of the *bhandar* have remained almost unchanged through the ages as the native *Nag* gods are averse to any change in the character of their abodes. However, it does not mean that the structures of these wooden *bhandar* are very ancient; it is

certainly not so. In fact, most of these *bhandar* have been undergoing repeated repairs, restorations and modifications, according to the pleasure of the presiding deity. As tradition has it, every wooden *bhandar* dedicated to the indigenous deity is supposed to be rebuilt duodecimally on the occasions of *Shant*, *Bhunda* or *Bhoj*. It is mandatory that the repair or reconstruction is carried out strictly according to the tradition and all the carvings and structural details are meticulously replicated in the new structures, so that the original character of the edifice is not disturbed. Nevertheless, the native gods are liberal enough to allow certain changes in the decorative aspects of construction that leaves enough scope for the artisans to indulge in experimentation and innovation in woodcarving. Thus, during such restorations, the *thawin* may also incorporate new decorative elements or they may feel inspired to evolve new motifs. This process of assimilation of new ideas upon every reconstruction of the old wooden *bhandar* has continued unabated through ages, keeping the traditional technology of woodwork and woodcarving alive and flourishing. Thus having undergone reconstruction, renovations and repairs, a *bhandar* is born anew after every twelve years, imparting to it a quality of dynamic agelessness (Figure 5.5).

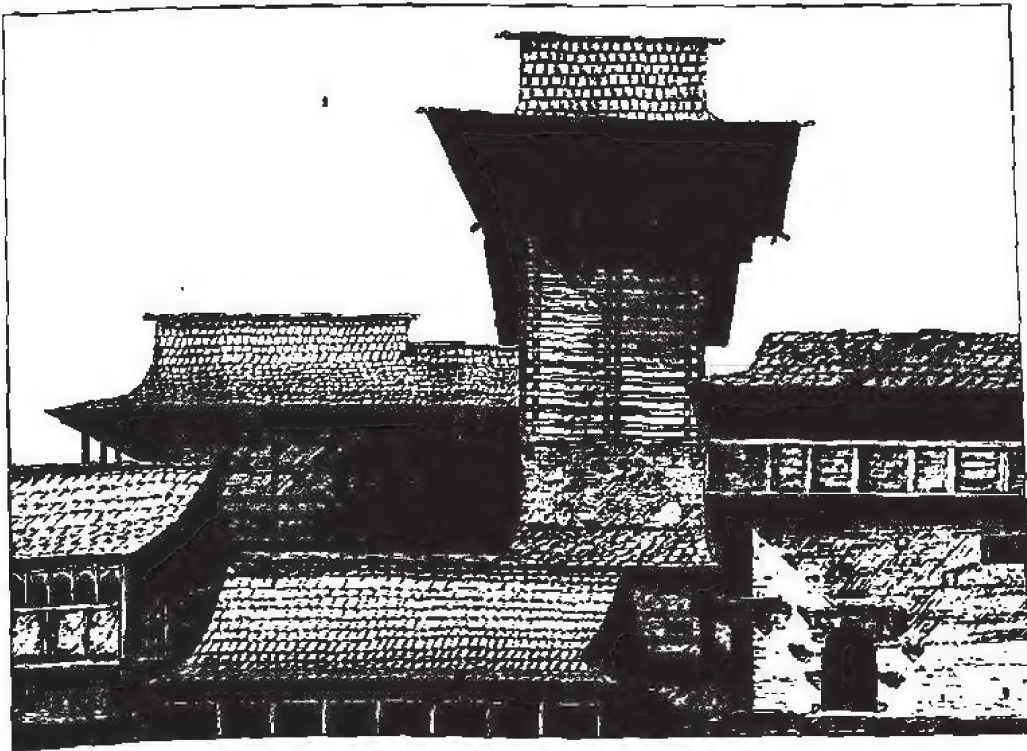


Fig. 5.5: The *bhandar* of a local deity in a village

Since most of the villages in the western Himalayan interiors have their community or village deities, there are numerous *bhandar* to enshrine them. Here, there shall be discussion of two of the typical examples of the *bhandar* in the interiors of the Shimla District. One such *bhandar* is dedicated to the *Baoindra Devta* at Village Bachhoonch and the other to the *Thainag Devta* at Harwani, both in the interior of Pabar Valley.

The Bhandar of Baoindara Devta at Bachhoonch

The *bhandar* of *Baoindara Devta* in the Village Bachhoonch in the interior of Pabar Valley is an interesting, massive towering structure. The structural fragments and several stone images around the standing edifice indicate that a classical stone temple of north Indian style (*shikharakara*) stood here in the remote past. As tradition has it, this *bhandar* was built about five hundred years ago by artisans from Mandi. According to a tradition, the men of Bushahr state inadvertently damaged the temple that existed here before the present *bhandar*. Therefore, the raja was afflicted with the divine curse. An oracle was summoned, who found the cause of misery and advised the raja to reconstruct the *bhandar* immediately so that the deity was pacified. Acting on the advice, the raja invited artisans from Mandi, who constructed the present wooden *bhandar*. However, the fact that the present *bhandar* was built by the artisans from outside is well indicated from the method of wall construction. Unlike the popular *katth-kuni* style, the walls here are made of dry stone masonry with wooden wall plates, used only on the outer face at wide intervals. This type of wall construction is typical to the Mandi area where timber is scarce. It is said that the green stones used for the *bhandar* were brought from the quarries located near Rampur.

This *bhandar* is a double storeyed structure, raised on an 8 m high solid plinth (Figure 5.6). An external ladder is provided from the stone-paved courtyard to the ground floor, through a cantilevered balcony. The ground floor, measuring 8.00 x 8.00 m externally, has a large square room of 7.30 x 7.30 m internally, with 35 cm thick stone masonry walls. The room is divided into two functional areas; one, for lighting the sacred central fire and the other, for congregation. The height of this floor is 2.44 m.

The first floor, approached through an internal stepladder, has two functional divisions – the *bhandar* and the cellar. Inside the *bhandar* many ancient votive objects, musical instruments and weapons are piled up on one side. The *bhandar* is roofed in a very elaborate manner, with an elevated wooden framework to prop up the roofing structure.

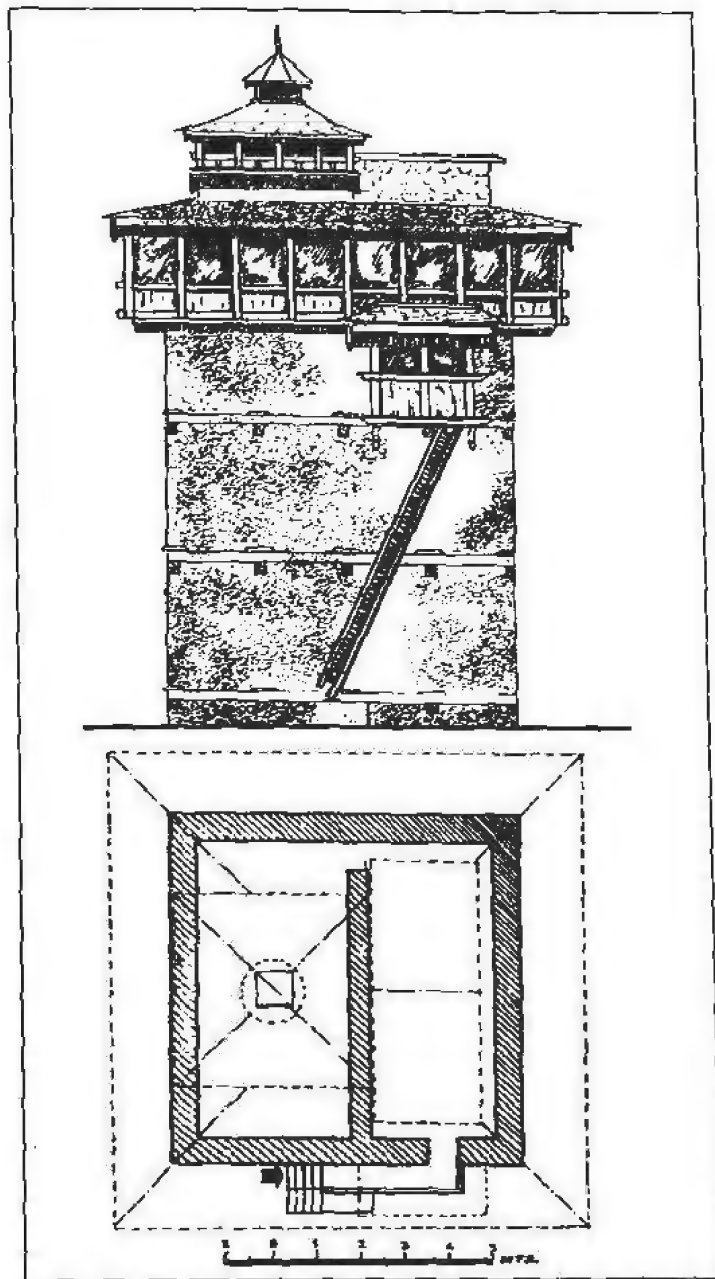


Fig. 5.6: The bhandar of Baoindara Devta at Bachhoonch

This elevated framework gives an impression of another storey above the upper floor. However, it is all ornamental roofing arrangement. The roof itself is laid in a composite pent-and-gable manner and is richly decorated. In December 2005, the *Bhunda* festival was held at Bachhoonch. On that occasion, the wooden structure of the edifice was completely rebuilt and the roofing arrangement made more elaborate and taller.

The Bhandar of Thainag Devta at Harwani

The towering *bhandar* of *Thainag Devta* at Village Harwani-Khanyara in the head reaches of the Pabar River is a magnificent wooden structure. Located at an altitude of 2440 m above mean sea level on the foot track to the Chanshal Peak, Harwani-Khanyara is an insignificant and small village, but a person with an eye for beauty will notice its *bhandar* – an excellent specimen of the indigenous wood-based architecture and artistic grandeur.

The multi-storeyed *bhandar* of *Thainag Devta* stands majestically against the thickly wooded dark green backdrop of the Kalag-patan mountain range, with the deep purple and hazy outline of the Chanshal Peak in the horizon. This environ renders an aura of mystic grandeur to this edifice. Enveloped in such mysterious surroundings, the story about the origin of *Thainag Devta* appears so real. For the simple impressionable village folk, living at the mercy of the malevolent elements in such an otherworldly setting, expect supernatural phenomena. They relate that long ago, village-women, when digging for *chamush* (a wild aromatic plant) in the high pasture land found a metallic object buried deep under the ground. The women carried that image to the village. With this, the people experienced many strange incidents happening around them, which they attributed to the presence of a deity amidst them. One night, the deity appeared in the village-headman's dream. The deity ordained that he should be housed properly and ceremoniously and 'installed' as *Nag Devta* (Figure 5.7).

The people built an elaborate edifice according to the dream and placed the idol on the topmost floor. Besides this popular tradition, the village elders also narrate an ancient incident related to a *bhandar*, *Surkhali* by name, in which the deity originally resided. It is believed that the *bhandar* was destroyed in an accident about 500 years ago. It was after the destruction of that *bhandar* that the present *bhandar* was built in the village. It may reasonably be assumed from the architectural style and the decorative devices of the structure, that it is certainly that old *bhandar*, notwithstanding the fact that the *bhandar* structure has undergone repeated repairs subsequently, the latest being less than a decade old.

The main *bhandar* is planned in a quadratic layout and externally measures 6.20 x 5.20 m with a single large room, which is internally 5.10 x 4.70 m. Attached to the main structure, on the left, is a small room of 2.70 x 2.50 m (internally). This four storeyed high edifice stands on a one storeyed high solid masonry plinth, the entire building towering to a grand height of 16.50 m from the ground level to the pinnacle.

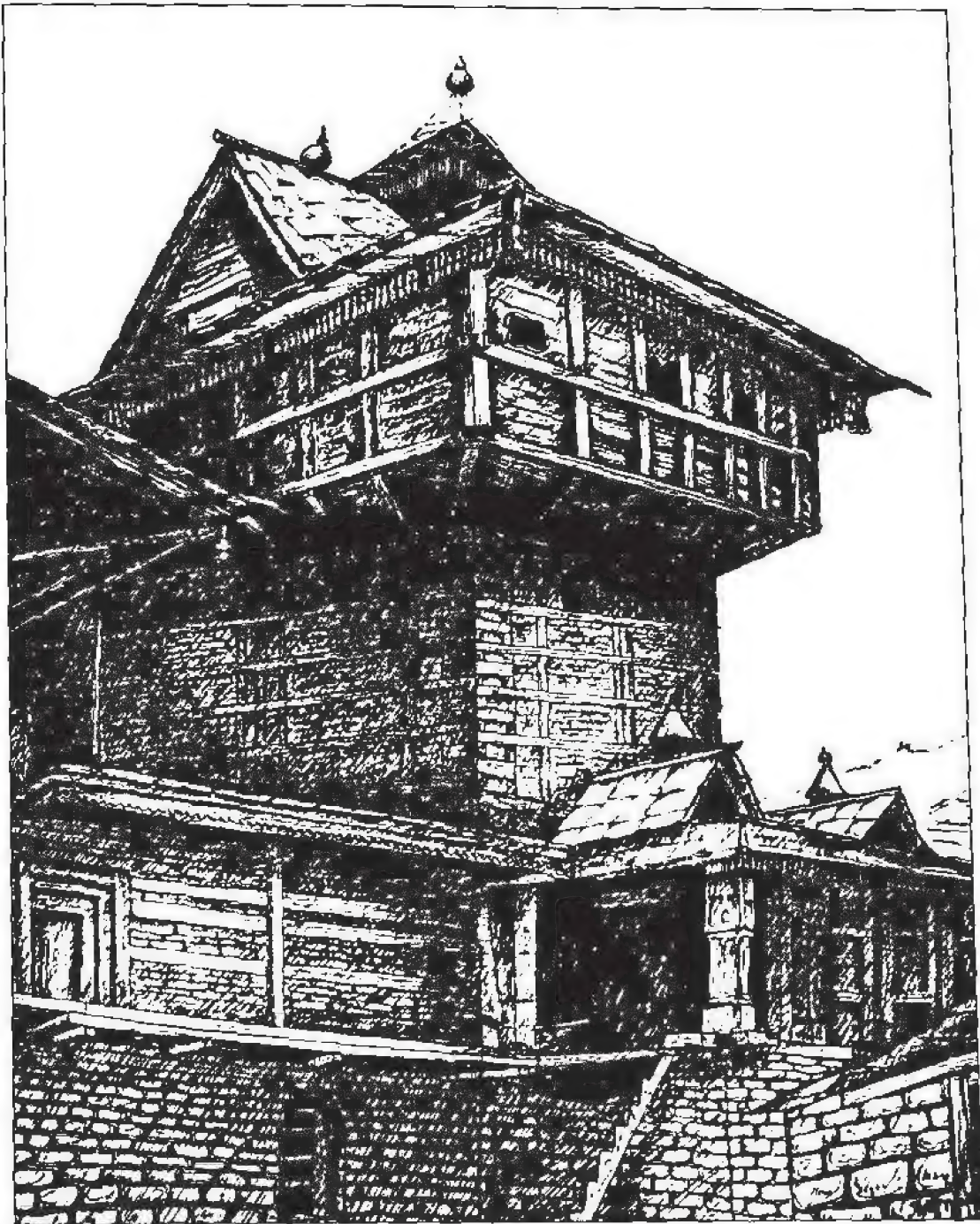


Fig. 5.7: The *bhandar* of Thainag Devta at Harwani

The walls of the *bhandar* above the plinth are built in the type of masonry that is known as *dhhol-maide* in the vernacular parlance. While designing this *bhandar*, security considerations dominated over all other factors. Accordingly, the access to the one-floor high ground floor was provided by a makeshift-notched stepladder (*shairta*). That ladder could be pulled up to the ground floor during the night and at the time of

emergency during inter-clan clashes, which were too numerous in the mediaeval past under the *khoond* institution. On the ground floor is an open porch, with a set of lean-to superimposed mini-gables. A conical turret surmounts each of these gables. The massive wooden pillars, supporting this roof, are tastefully engraved with fluent and bold patterns.

A door from the porch opens to a large room behind it. From that room, the upper floors are approached through the stepladders. In the intermediate floors, the valuables of the deities and the village communities are stored in sturdy and heavy wooden boxes in different rooms. In one room, musical instruments, some metal ware and miscellaneous objects are stored. The rooms are dark and dingy, with only very small ventilators with grilles. The room is on the third and topmost floor, above which there is an unoccupied attic (*darak*). The third floor has an enclosed balcony on all four sides. That type of balcony has been an essential feature of the towering *bhandar*, not only for religio-aesthetic considerations, but also from the security point of view.

The high-pitched two-tier hipped roofing over it is the finest part of this *bhandar*. This roofing has enhanced the aesthetic beauty of this edifice manifold and secured ample head-height for the *darak*. To allow enough light and air into the interior, a roof-level dormer is provided for the attic floor, and grilled high-level ventilators for the lower floors. All the hips and ridges are capped by deodar wood *kurad*, with heads carved to form crocodile snouts. The roof-ends have been very tastefully adorned with moulded wooden fringes (*kharoori*, *gadudu* or *khururu*) and corner bells or lanterns (*ghanti*). The whole edifice, with other subsidiary sacred structures and spacious courtyards around give a spontaneous feeling of palatial dimensions to the *bhandar*.

THE CASTLES

Besides the *kothi*, *kathyar* and *bhandar*, ancient and mediaeval towering castles belonging to the pre-monarchical period may be seen strategically perched on the ridges, ledges and spurs of different mountain ranges in the Himalayan interiors. Except for Chamba District, towering castles are found in the entire interior of Himachal Pradesh and up to Yamuna River in Uttarakhand, where an ancient castle (now converted into the temple of *Shani Devta*) stands at Village Kharshali below Yamunotri. Those castles were multipurpose structures, mainly conceived of as defensive strongholds and community strong rooms. Many of the castles in the interiors belong to the pre-monarchical period,

when the village or community level theocratic oligarchies flourished in the Himalayan interiors under the *mawi* and *rai* – the headmen or strongmen. That was the period when different communities in the Himalayan interiors were polarised into two antagonistic factions – the *khoond*, known as the *Shattha* (or *Shatthi*) and *Pattha* (or *Bashi*). Inter-*khoond* sanguinary skirmishes, loot and plunder were a recurring feature of that age.

Since theocratic institutions have been gradually losing their relevance and effectiveness with the establishment of the statutory administrative system, these towering structures have lost their practical purpose. Most of these have been converted into abodes of the local deities, mostly, the *Jogini*. The castles at Chaini in Kullu, Gondhala in Lahul, Kamaru and Sapani in Kinnaur, and so on, are such examples. With the decline of theocratic oligarchy, the Thakur and Rana appeared under the monarchical setup. They also built castle-like secure structures as their residences, where they could live safely. The earlier rulers of Bushahr state also built castle-like temples and palaces for themselves at strategic locations in the Satluj Valley.

As a rule, most of the towering castles have been built on strategic considerations for defensive purposes on an elevated position so that surveillance of the whole terrain could be ensured. However, logistics were also fully taken care of so that the people could also seek immediate protection in it from the aggressors and be ready to counter-charge. These edifices were built on a square plan. To ensure stability of the tall structure, at least a one storey high solid masonry plinth was provided, which ensured a strategic height to the main entrance. No permanent staircase or steps were provided to reach the elevated entrance. However, a makeshift notched-stepladder was placed in position for the people to get in. It was pulled up inside the castle once every one had entered. To ensure uniform distribution of the superimposed load on the foundation, the sturdy and heavy *cheol* were also provided at intervals in the solid stone masonry in the style that has been known as *dhol-maide* in Kullu District. The walls above the high plinth were raised in the usual *kattb-kuni* style. The thickness of these walls is between 1 m and 1.50 m. In the walls, at suitable points, small watch-holes are left for surveillance and for firing at the invaders.

The internal arrangements of the castle varied according to the local requirement, but the ground floor is generally occupied by a single large room, which in the ancient past, when the castle was a functional structure, might have served as an assembly hall. From the hall, a narrow notched stepladder was provided to reach the upper floors through the trapdoors large enough for one person to pass through. One of the rooms

on the topmost floor was reserved for the clan deity (*kul-devta*) or the community deity (*gram-devta*), and rest of the top floor and all other lower floors were divided for the storage of food grains, water, weapons and musical instruments and for garrisoning. On the topmost floor, and sometimes on the floor below the topmost one also, there was a covered projected veranda on all the four sides for movement and surveillance. The floor of the cantilevered verandas was so laid that a part of it could be removed, leaving gaps. Through these gaps, heavy stones, burning logs, arrows or other missiles could be hurled at the invaders, if they ventured near. Such projected verandas still exist.

The roof provided over these tall structures mostly is of the pent-and-gable 'composite' type. However, the gable roofs may also be seen over some tower temples, as at Chaini. The pent-and-gable roof has been made complex and ornamental at many places conforming to local aesthetic tradition. In the interiors of Lahul and Kinnaur area, the castles have flat mud roofs similar to the vernacular houses. These castles will be discussed in the context of secular vernacular architecture of this region. Among these, the Chaini castle in Kullu, the tallest freestanding structure in the entire Indian Himalaya region, deserves special mention.

The Chaini Castle in Kullu

A steep climb of about 6 km from Banjar in the interior Saraj area of Kullu takes one to Village Chaini. Located at a commanding height of 2000 m above mean sea level, this village offers a magnificent panoramic view of not only the Thirthan Valley, but also of a maze of mountain ranges as far as the eyes can see. Chaini Village has a reputation of being the traditional home of accomplished stone and wood workers. Whether that reputation justifies the existence of tall structures in this village or those towers lent that reputation to it, is debatable. However, it is a fact that the Chaini castle or the Great Tower of Chaini (also known as the Chaini *Kothi*) is the tallest freestanding structure built in the traditional local architectural style in the entire Indian Himalayan region. The towering height of this structure is enhanced manifold by its strategic location on the shoulder of a spur, with all paths leading to it – a steep ascent.

This castle in its present condition is more than 45 m tall. It lost its two upper storeys in the fateful Kangra Earthquake of 1905, which virtually reshaped the entire Thirthan Valley. People of the area carried out restoration of the extant structure, saving it from further damage; it still stands sentinel over the entire valley in its traditional majesty and grandeur (Figure 5.8).

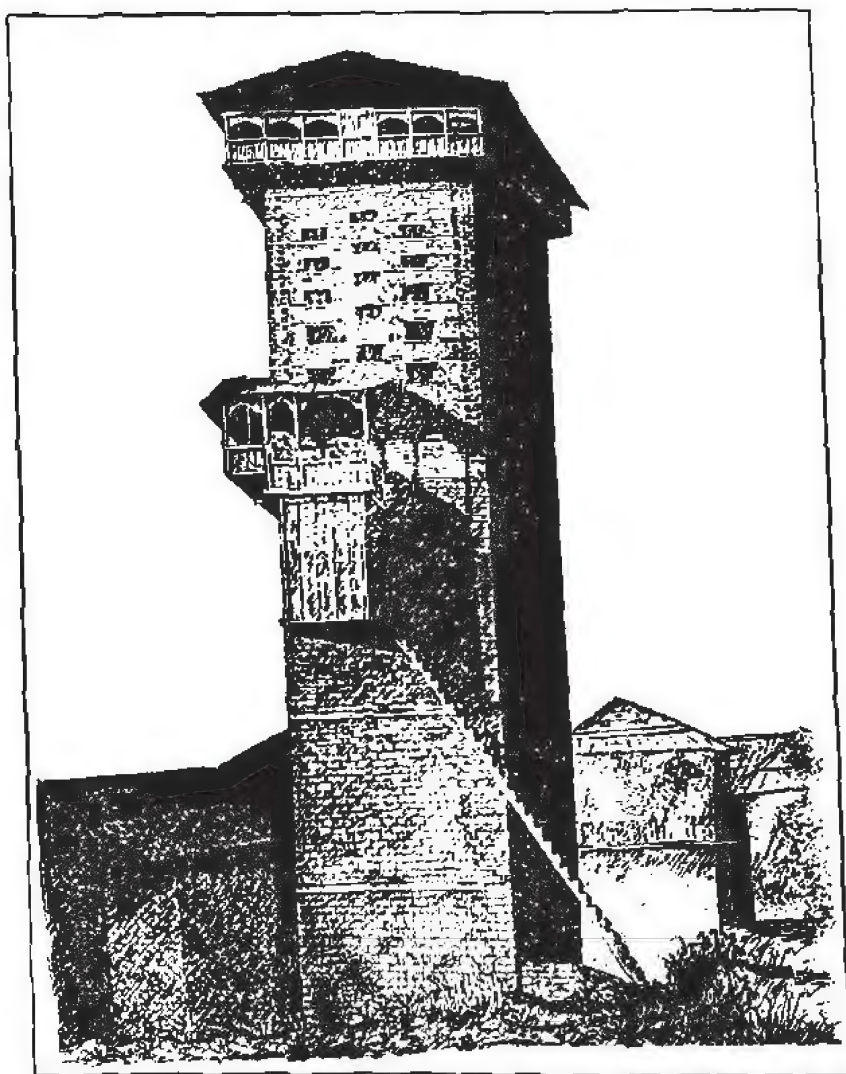


Fig. 5.8: The Chaini Castle in Banjar Valley of Kullu

According to the local tradition, a Thakur named Dhadhu built this castle as a defensive stronghold, between the seventeenth and eighteenth centuries CE. This fact is revealed from the tapered recesses provided in the walls overlooking the valley to position matchlocks and a large ammunition pit on the ground floor. It is also known as *Dhadhiya Kot* after his name. It is said that Dhadhu rebelled against his subordination to the ruler of Kullu. He was killed in one of the encounters. The widow of Dhadhu prayed for mercy to the ruler of Kullu and requested that in memory of her family, the name of the village (where the tower stood), should be changed to her name. Thus, Village Kuthed, where the tower stands, became known as Chaini after the widow of Dhadhu Thakur.

In order to provide a strong and stable base to the tall structure, the 15 m high plinth of the tower was made of solid stone masonry with massive deodar beams provided at wide intervals in the *dbol-maide* style, so that the superimposed dead weight is evenly distributed over the whole area. Nevertheless, the effect of ageing is now seen in the form of vertical fissures. The upper five storeys of the tower have thick walls, made of timber-bonded dressed hard white stones in the *katth-kuni* style.

The only access to the tower is through a long and massive notched tree-trunk placed diagonally against the wall. That could only be removed with great effort from its position after the tower was fully garrisoned for defence against the attacking troops. To climb, one is required to balance his feet precariously on the notches with the precision of a tight rope-walker because there is nothing around to protect him, except his sheer grit and confidence, until he reaches a small projected balcony well nigh 12 m from the ground level. From that balcony, a steep stepladder leads one to the other balcony to the upper level, 3 m higher. There is a door to get into the tower.

On the 'ground floor,' there is a 3 m square pit, dug 3 m into the plinth masonry, with a 1 m wide walkway around. During the mediaeval past, this pit was used for the storage of supplies and ammunition for the garrison. From one corner of this floor, a steep stepladder leads one to the upper floor, and then the same arrangement is repeated, until one reaches the fifth storey. There is nothing of much interest in these intermediate floors.

On the fifth storey of the tower, there is a small and elevated wooden altar at one corner. In it, seven small metal images of the protective goddesses, locally known as the *Jogini*, are installed. These could be the *sapta-matrika* – the seven protective mothers – *Brabmi*, *Maheshwari*, *Kaumari*, *Vaishnavi*, *Varahi*, *Indrani* and *Chamunda*. No regular *pooja* is performed here and the tower mostly remains closed. On this floor, there is a projected balcony all around, from where one can get a magnificent view of the mountains and the valley as far as the eyes can see. Standing at such a dizzying height, from where everything down below looks dwarfed, and the whistling winds making the heavy floor-planks rattle under one's feet, one may get an instant feeling that the God or His terrifying manifestation should be around somewhere. The tower is covered with a large and low-pitched gable roof. That must be an improvisation after the 1905 Earthquake. The roofing might have originally been of the pent-and-gable type, for the present gable roof does not appear to be suitable for such a large span.

Next to the Great Tower, on the lower terrace is the five storeyed tall temple of *Murlidhar*. The other tower-type building is the *bhandar* of *Shringi Rishi*, located a few metres away on the hillside of the Great Tower. *Shringi Rishi* is the presiding deity of the Thirthan Valley. The *bhandar* building is an imposing structure, though smaller than the Great Tower.

The Gondhala Castle in Lahul

Descending the Rohtang-La (4100 m) down the serpentine Chandra Valley, the view around becomes gradually confined and narrow between the converging mountain slopes on all sides. However, the stark rugged grandeur of the lofty overhanging rocky mass and the windswept mountain slopes fills one with awe and wonder. After covering a little distance, however, the valley seems to become habitable and one comes across clusters of houses and cultivated terraces around. With every turn, a newer and wondrous mountainscape of fissured rocks, surmounted by jagged cliffs and glistening cascades, is revealed.

As Gondhala is approached, the landscape becomes increasingly richer. There, atop a local rocky feature on the right bank of the Chandra River, at an elevation of 3110 m stands the majestic and high-rising tower of the Gondhala castle. This tall tower once formed a part of the famous castle-palace of the local Thakur. Most of the portions of the complex that was once the palace are now in ruins, with the debris scattered along the slopes. However, the towering bastion of the bygone feudal authority still stands stoically in its tattered condition. This eight storeyed tall feudal edifice, made of local stones, laid in mud mortar and securely bonded by alternate layers of massive deodar logs, is the most imposing and loftiest structure north of the Rohtang-la.

The Gondhala castle was once the pride of Lahul region (Figure 5.9), and it consisted of an elaborate complex of buildings around the central defensive tower during its heyday, when the local chief, the Thakur, ruled over their fiefdom from here. The standing castle proper was used both as shelter and stronghold for garrisoning against the invaders. Watch holes were made on the northern wall of the tower, which overlooks the traditional route of the valley.

In view of its defensive importance, no regular staircase is provided to it from outside and within the castle. One has to use a makeshift notched stepladder for that purpose. In the past, whenever an attack on the castle was anticipated, the stepladder was pulled up into the room and the entrance closed with massive wooden shutters.

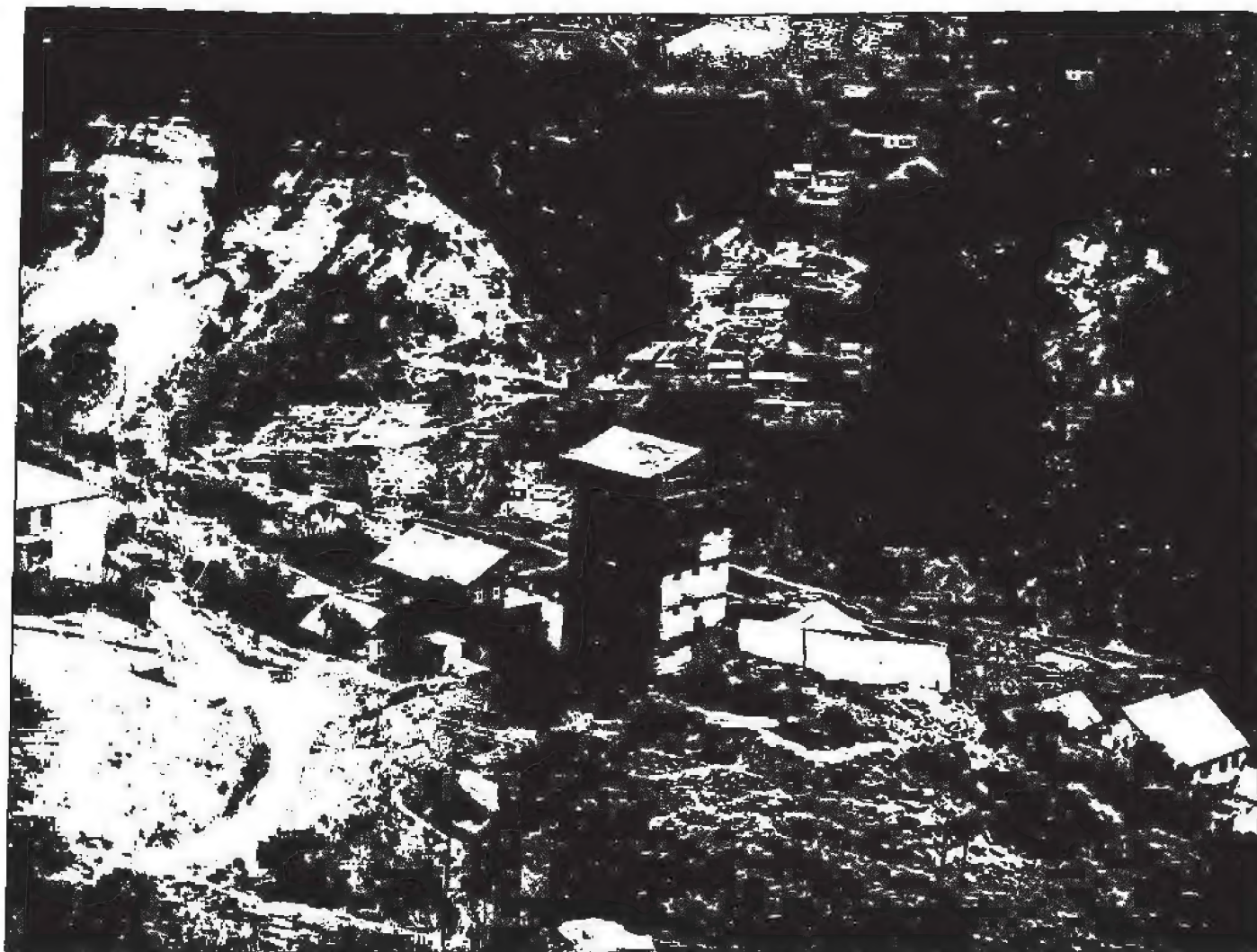


Fig. 5.9: The Gondhala Castle at Labul

Thus secured from inside with massive logs inserted into the side wall, entry into the castle was impossible for the invader. The top floor of the tower has a wide and enclosed cantilevered veranda on all the four sides. The men positioned in that veranda hurled all sorts of missiles over the hapless and bewildered invaders. The massive structure is covered with a mud roof similar to most of the buildings of this area.

After the decline of the Thakurs' authority, the owners found the massive castle unmanageable. Thus uncared for, it has remained largely at the mercy of the elements that have already taken a heavy toll and deprived it of the ancillary structures, which once propped up the central tower. Vandals have also contributed to the degradation of the complex by taking away useful material from the fallen structures around.

The Gondhala castle was built by Raja Man Singh of Kullu around 1700 CE, after marrying the daughter of the local Gondhala chief, as may be inferred from the inscription that exists on the main entrance of the tower. The interiors of the tower are very spacious, with a number of small and large rooms. Those rooms, according to Captain A.F.P. Harcourt, who visited it in 1869 CE, could comfortably accommodate 100 persons at a time. In the top storey of the tower, winter clothing and beds were stored. Some of these are still dumped there.

Most of the rooms in the castle are now in disuse, but the two gloomy rooms on the top floor are still functional. These enshrine the family deity of the Thakurs. The outer room contains a collection of dust-laden and completely weathered *thanka* and some of the temple artefacts and musical instruments. The inner room is filled with boxes of manuscripts and images made of metal, wood, stucco, and so on, mostly related to *Vajrayana* Buddhism. It is told that most of those holy objects were brought from Lhasa and Shigatse long ago, but some images may be of Nepalese origin. The shrine is visited only once or twice a year on specific occasions, and for the rest of the year, it remains closed.

The gigantic size of this castle has earned it a reputation of awe and wonder among the people of Lahul, as a result, innumerable legends are woven around it. According to one, the local chief put the architect of this castle to death to prevent him from creating a similar 'marvel' for his rival.

The Kamaru Castle at Mone

In the interior of the Satluj Valley, there are three castle structures – the Kamaru castle at Mone, the castle-palace at Sapani and the castle-temple of Bhimakali at Sarahan. These magnificent structures are interesting in many ways. Firstly, wood has been the staple material of construction of these edifices. Secondly, all these have profusely carved woodwork and graceful high-pitched roofs. Thirdly, all the three structures are architecturally and structurally similar. Fourthly, these three castle-structures form part of a distinct architectural style, the likes of which are not found in the entire Himalayan region. However, while the Kamaru castle at Mone and the castle-palace at Sapani were intended essentially to be protected royal residences, the castle-temple of Bhimakali at Sarahan is a religious edifice, though built like a defensive castle, well-protected from all sides with barrack-like buildings. Of these three, the Kamaru castle at Mone is the

earliest and the castle-temple of *Bhimakali* (Figure 5.10), the latest. Below, the Kamaru castle at Mone will be discussed, followed by the castle-palace at Sapani.



Fig. 5.10: The Bhimakali Temple at Sarahan

Situated on the commanding rocky outcrop of a mountain spur at an altitude of about 2500 m above mean sea level in the scenic Baspa Valley of Kinnaur, Mone is one of the most ancient villages of Kinnaur District, with an eventful and hoary past. Apocryphal traditions – and these are numerous – associate this place with the foundation of the erstwhile Bushahr kingdom by a fugitive cadet from the mainland, who sneaked into this terrain from Badrinath in Uttarakhand and he overpowered the Thakurs of Baspa valley and established his kingdom with the capital at Mone.

The castle at Mone (Kamaru), called *Mone-pira* or *Mone-gorang* in Kinnaur, belongs to the *thakurai* period, when the residence of the Thakur and the protective goddess was provided in the same high-rise fortified citadel. The tall castle at Mone (Kamaru), measuring 11 m² on the plinth, was designed (Figure 5.11) as a defensive structure for being adequately garrisoned against attack. It was for this reason that the five

storeyed tower was conceived as a multifunctional structure on a one storeyed high solid plinth, similar to, but of lesser height than the Chaini castle. To reach the ground floor, a portable stepladder might have been originally provided. That could be lifted up conveniently into the building, when required.

On the ground floor, there are five rooms used as kitchen, stores and refectory. On the first floor, there are three rooms. One of them is empty. In the other larger room, Buddhist tutelary deities, allegedly brought from Tholing (the capital of Guge in western Tibet) have been installed. Probably those images came as marriage gifts with the Guge Rani, who had her palace at Sapani in lower Kinnaur. The third room was meant for religious rituals. Out of the five rooms on the second floor, one remains always closed. It is said that once a leopard entered it, and it is still trapped inside. The other room is used for slaughtering animals during the triennial fair held here, when the goddesses of Chitkul, Rakcham, Badsari, Sangla, Chansa, Shaugh and Sarahan visit Kamaru to pay their homage to the Goddess *Kamakhya*, who resides in this castle on the top floor. The third room is used for sacrificial rituals, the fourth is used for enshrining the visiting goddesses and the fifth one is the magazine-room in which old weapons and ammunition are stored. On the third floor, the largest room was used as the *darbar* hall. The other room was used as a private chamber for the *rani*. Three other rooms were used as the kitchen, store and for water-storage. At the top, on the fourth floor, is the temple of the presiding goddess *Kamakhya*. The Kamaru castle, as it stands today, is an elaborate structure of traditional wood-and-stone walls. This structure might have undergone extensive modifications and additions when it was occupied by the early rulers of the Bushahr kingdom. The balcony-like canopy in front of the main entrance on the plinth and the enclosed graceful balconies on the two top floors are such additions. Still much later, modifications may be noted from the flat and plain panelling work of the cantilevered balconies. The tapered and gracefully turned and fluted posts are, however, indicative of the artistic grandeur of the earlier woodwork. The tower structure is covered with high-pitched hipped roofing, surmounted by a gable-roofed canopy that has imparted to this ancient structure, a dignified eminence.

The Castle-Palace of Guge Rani at Sapani

Higher up in the Satluj Valley in Kinnaur District, the modest and sleepy Village Sapani (or *Da-pang*) is perched on a rocky spur of the mountain range above Karcham. This village is approachable from Karcham on a 6 km long bumpy road by jeep. There is

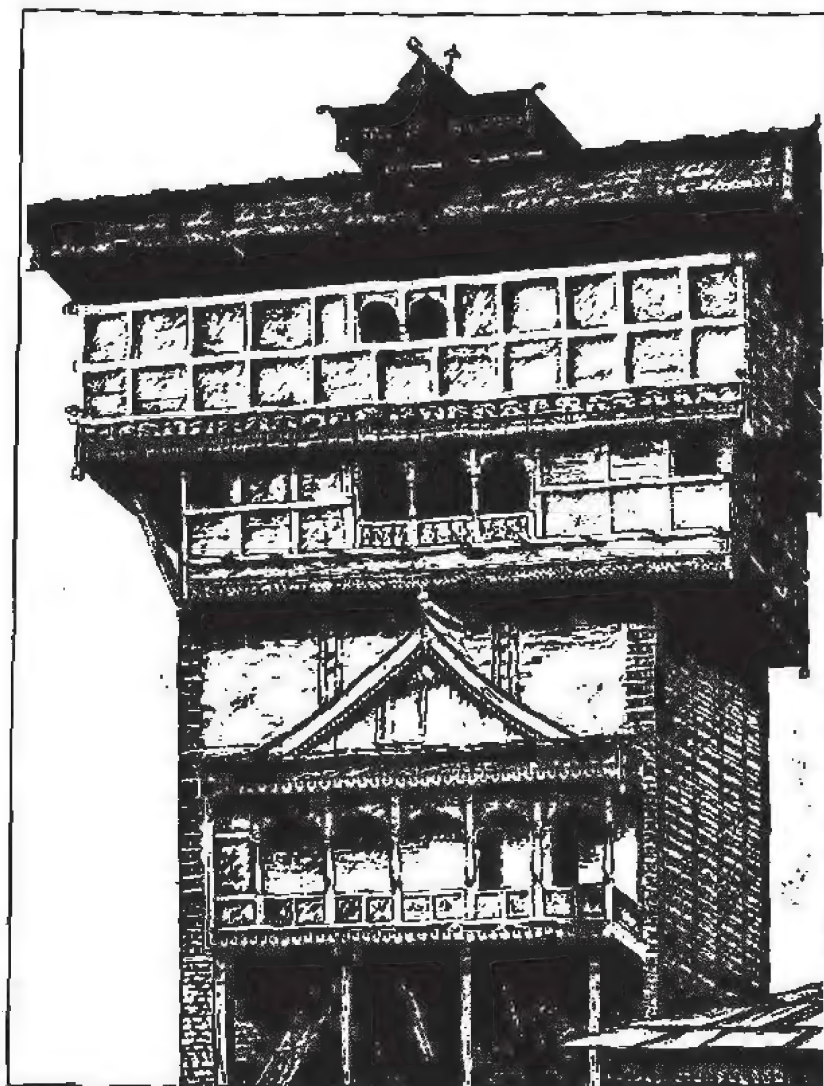


Fig. 5.11: The Kamaru Castle in Baspa Valley

another approach – a 3 km arduous yet scenic pedestrian track through the deodar forest. This village, overlooking the valley below, provides a vast panorama of the mountains around. Located away from the main road, at an altitude of 2600 m above mean sea level, this village remained out of reach for most of travellers. Thus, the castle-palace of Guge Rani built in traditional wood-based architecture style remained unnoticed.

The impressive and towering castle-palace of Guge Rani stands on a rocky ledge at a secluded spot in the village. The evidence indicates that this tall castle once was an important local centre of authority and opulence that attracted abortive attacks from the Gurkhas, but it languished into obscurity after the capital of the erstwhile Bushahr state was shifted to the present-day Rampur town. This magnificent edifice, made of

sturdy composite wood-and-stone walls, remained in a good state of conservation until the environmental degradation of the inner Himalayan ecosphere in the recent decades. Located closer to the monsoonal zone towards the south, the effects of weathering are clearly visible on some of the structural parts of this castle.

This castle-palace is a colossal structure, comprising two buildings – the castle and the palace – integrated into one. The double storeyed building on the right is the palace, which also provides an access to the towering castle on its left. This building, with the *chowki*-type square layout, buttresses the castle on one side. Such a *chowki*-type layout is a rare example in Kinnaur and rest of the trans-Himalayan interiors, but is a common layout pattern in the foothill areas of this region. The palace building, covered with hipped roofing, has wooden planks as roof-covering material. To the left of it, is the castle-proper. On the top floor of the castle, an image of Bhimakali is now enshrined, but in the past, when this complex was founded, the castle served as a defensive tower. The square-cut honeycombed windows in the tall structure, not only provided facility for vigil in the past, but also admitted air and diffused light into the interiors. Originally, this tower had seven storeys, but the top two storeys suffered extensive damage in the Kangra Earthquake of 1905. Those damaged storeys were pulled down afterwards during the reign of Raja Padam Singh (1914-1947 CE) of the erstwhile Bushahr state. Now only five storeys remain, Raja Padam Singh also carried out extensive repairs to the tower and re-roofed it in its original style with graceful high-pitched gable roofing covered with thin slates in place of the original wooden planks. There is a narrow and partly enclosed balcony provided on the three exposed sides on the top floor of the tower. The rustic restoration work done later stands starkly against the graceful rich ornamentation in the original portion inside the complex.

The inner portion of the smaller secular building on the right (Guge Rani's palace) still possesses some of the original carvings on the wooden pillars and wall-panels. The anthropomorphic and floral carvings, depicting *Vaishnav* and other classical themes, are characterised by deep undercuts executed with fluent chiselling and dextrous modelling that are reminiscent of the classical style of the earlier stone temples. The whole treatment bears a diffused but distinct influence of the Kashmiri art style. However, some of those carvings are certainly of a later period, of the seventeenth CE century, when, after the signing of a treaty between the ruler of Guge (in western Tibet) and Raja Kehari Singh (1639-1696 CE) of Bushahr state, a matrimonial relationship between

the two rulers was entered into. The princess of Guge was married off to Kehari Singh. Since the princess of Guge (Guge Rani) preferred to live in the cooler environs of Kinnaur, the outer building of the castle-complex was converted into her residence. Hence, it came to be known as *Guge Rani's palace*, prior to that, this part might have been used to house a garrison (Figure 5.12).



Fig. 5.12: The Guge Rani Castle-Palace at Sapani

The strategic location of this castle-complex on the cliff attracted an attack of the Gurkhas during their invasion of Bushahr kingdom. However, the attack was repulsed by the people effectively by using a naïve and primitive stratagem, called *dhing* in the vernacular parlance. The Bushahri troops hurled volleys of massive stones and boulders released from the tops of deodar trees with tremendous force over the enemy positions

in the manner of the Roman catapult. For that contraption, they selected tall strong deodar trees around the castle and bent them backwards by pulling them with sturdy ropes. On the top ends of those bent trees, heavy stones and boulders (*dbing*) were attached. When everything was set, the ropes were cut abruptly, releasing the boulders with enormous force. The startled invaders had no option but to retreat. The arrows used by the Gurkhas in that action were retrieved from the tree-trunks and it is said that those are still preserved in Village Punang near Tapri.

This magnificent castle, as it stands today in its stoic grandeur, is a fine example of stone-and-timber architecture. The high-rise meticulously plumbed walls are not more than half a metre thick. However, being well-bonded in the sturdy wooden frames made of the *larje* (deodar beams), the walls are still very secure and stable. Further, the walls are tied together with an elaborate framework of massive floor beams and joists. Thus, this castle is made structurally very strong and compact.

Having now studied a few of the important traditional buildings, such as the *kothi*, *kathyar*, *bhandar* and castles that dot the landscape of Himalayan interiors, it becomes amply clear that these have largely been pompous wood-based structures, either designed as the administrative hubs or as the centres of popular faith. The *kothi* was the headquarters of revenue units. These were mostly the two storeyed buildings built on a square layout with open space in the middle. The revenue collection, mostly in kind, was stored in different rooms of a *kothi* on the ground floor, while the upper floor served as residence of the local revenue officer – the *kardar*.

Functionally not different from the *kothi*, was the *kathyar* or *kathar*. Most of these were the single storeyed buildings owned by the landlords, who used to stay in these to claim their share of harvest. These buildings, set in the rural environs amidst the fields, also served as the well-supplied retreats for them.

Located strategically in the middle of the village, the *bhandar* was so designed in two functional levels that the lower floors served as the repositories of community wealth. In the top floor, the village deity was enshrined. Although, under the changed conditions, these are no longer the community strong rooms, but these still continue to be the vigorous centres of popular faith.

The timber-bonded towering castles were built on the strategic heights for surveillance and defence. These were essentially built on a square plan, and for structural strength and solidity, these were raised on the elevated solid masonry plinth. The interior

compartments of these defensive structures could only be accessed from the portable notched stepladder that could be pulled up inside the castle in emergency.

Most of these structures, having lost their traditional importance, are languishing in a pathetic state. However, the *bhandar* continue to command reverence and liberal support using the people as the edifices of faith.

LAYOUT AND PLANNING

THE LAYOUT AND PLANNING PARAMETERS OF THE SECULAR AS WELL AS RELIGIOUS buildings, located in different biophysical and geographical pockets in this region, are mainly conditioned by nature. Besides, religious beliefs and sociocultural factors have also played a very important role in the layout and planning. All such aspects have already been discussed in detail in the relevant contexts in previous chapters. In this chapter, only a general discussion is taken up.

One of the significant features of the traditional, vernacular domestic architecture of this region is that except for the occasional service of the professional carpenter for specialised woodwork, no skilled or unskilled labour is employed from outside the community. All operations, right from the collection of material to construction, are accomplished by pooling the manpower through customary community participation, known by various names at different places. From the first step, when the foundation stone is ritually laid, until the *thawin* comes down from the roof, signalling the completion of the house, the construction and ritualistic activities go together. At the beginning or completion of work at a particular stage – such as the completion of plinth work, placing of the main door and the roof beam, starting roofing work and so on, a ceremony, brief as it may be, must be performed. Such a ceremony is brief at the time of laying the foundation stone, but is elaborate at the end, when several goats may be sacrificed to celebrate the housewarming. The importance of housewarming can be inferred from the fact that this occasion is specifically known by different names at different places. It is

known as the *nayaz* among the Muslim Gujjar of Chamba. The Gaddi call it *pathraitna* and the Pangwal call it *badhaie manana*. In the trans-Himalayan region, it is known by different names, namely, the *gaurasing*, *gharsning*, and *poriashma*, and so on.

Right from the beginning till the end, the owner and the community are directly involved physically and emotionally in the entire process. Thus, such a house not only represents the collective psychological response of the community and the owner, but it also reflects their religious, pragmatic and aesthetic involvement in the whole venture. The structure that they collectively build is essentially conceived as a living 'home', and not a cold 'house'. It is in such a traditional context that a house is conceived as a living entity – the *griha devta*. To ensure sanctity of the whole process of construction, religious rites are performed at various steps and all possible precautions are taken.

To start the work, the most propitious day and time is decided taking into consideration all the good and bad omens. Thus, for laying the foundation stone of a house, the Muslim Gujjar of Chamba consider Sunday, Monday, Thursday and Friday, auspicious days but the specific day to start work is usually decided by the mullah. Similarly, in lower Kinnaur, these days – Sunday, Monday, Wednesday and Thursday – occurring in the bright half of the Indian months from Baishakh to Ashadh (from mid-April to mid-July) are considered auspicious for starting construction of a house. In most of the places in the outer Himalayan region, the *Navaratra* are regarded as the most auspicious time for starting house construction, especially in the Kyarda Doon (Paonta Doon).

In the totem-ridden Giri-par area of Sirmaur District in Himachal Pradesh and Jaunsar-Bawar *paragana* of Dehradun District of Uttarakhand, once the foundation work is begun, round-the-clock vigil is kept at the site of construction, until the masonry work is completed up to the plinth. People fear that somebody may embed a pernicious charm in the structure that may cause misery to the owner and his family. The owner will even take his meals at the construction site and keep awake through the nights with the fire burning beside him, guarding the foundation. Apart from the owner or the *baddhi*, no one is supposed to enter the area within the four walls of the proposed house, until the walls reach the plinth level. During that period, even the labour engaged for the job is required to pass on the material – stones, mud mortar, and so on – from outside, across the trench to the *baddhi* or the owner, standing on the other side. The *baddhi* is supposed to work from inside only. If any one violates this customary practice, the *baddhi* has the right to claim compensation, which may include anything the intruder carries on his person, be it a cap, coat, blanket, shirt or stick.

People also believe that a snake circles around the proposed house. Therefore, at the time of laying the foundation stone, the *baddhi* secretly lays first two stones with a gap in between to ensure a safe passage to it.

Besides the religious importance of *griha devta*, the doors of the house, especially the main entrance, are also regarded as equally important. In most of the traditional houses, the doors are of a small size, sometimes so small that one has to virtually crawl through these. In the outer and middle Himalayan region, generally the small doors with elevated sills open into the sunken rooms. One is required to bend to pass through a door to enter the room. Bending at the door is customarily regarded desirable as a token of respect to the *griha devta*. In fact, the door is held sacred, and it is usual to find an image of a deity carved on the top part of the doorframe. At times, *mauli* (untwisted cotton thread, dyed red or red-and-yellow) and other votive objects ritually treated to ward off evil eyes are also tied to the lintel so that the person passing through the door may be 'sanitised'.

The domestic architecture of this region is necessarily utilitarian and functional, with the least use of superfluous appendages, angles and projections. If the site conditions permit, all the residential houses are laid out in a quadrangular formation, which tends to verge on the quadratic plan. People are intuitively aware of the economy of the quadratic layout, without being aware of the logic of area-perimeter ratio. The equation can be explained by the example that a 6 x 6 m room has a 24 m long perimeter and a floor area of 36 m². However, a room measuring 8 x 4 m also has the same perimeter, that is, 24 m, but the floor area is only 32 m². Thus, a square layout of a house involves lesser length of walls for the same floor area than the rectangular one.

Notwithstanding the economic factors, geoclimatic considerations also play a very significant role in deciding the geometry of the layout. In the foothills, where subtropical biophysical conditions prevail, the climate for the most part of the year remains from hot to warm. In such conditions, it is necessary that the interior should remain well-ventilated and airy. To achieve this, the houses extend lengthwise in relation to the depth. These are normally built in a linear formation, with the rooms in a single file with or without the fronting veranda. Windows are provided in the front and back wall to ensure free movement of air.

The same consideration holds good for the wood-based architecture of the temperate mid-Himalayan region. However, the layout of houses tends to be quadratic. The fronting cantilevered verandas of the houses are enclosed partly or completely with wooden

panels, and the large rooms, with small doors, are virtually windowless. Moreover, to escape the wintry chill, people shift to the well-insulated entresol or mezzanine, locally known as the *pand*. However, the scenario is entirely different in the trans-Himalayan interiors, where alpine and arctic climatic conditions prevail. In that region, most of the houses are built on the square layout. Nevertheless, houses built on the rectangular layout may also be found, but the difference between length and width of these houses is so small that the layout tends to be square in shape, rather than rectangular. The arrangement of the rooms is complex, with many rooms, large and small, arranged one after the other. The rammed earth walls are very thick to beat the chilling wind. In the Zaskar area, even the living area used in the winters is partly sunk underground and buried in the mountain slope, to keep the interiors warm during the winters. Proximity to the cattle in the adjoining rooms also contributes to the warmth.

However, against the overall quadratic layout of the house, the rooms within are usually rectangular, mostly in the proportion 1:1.2 or 3:4, conforming to what may be defined as the golden proportion. The reason for the almost oblong shape of the room may be that a square room, though economical, may give a feeling of monotony, suffocation and claustrophobia which may be detrimental to the mental health of the occupants. In contrast, a rectangular room looks roomy and gives a subtle feeling of airiness and space. These abstract notions are deeply set in folk consciousness. The rooms of traditional vernacular houses may be dimly lit and poorly ventilated by modern standards, but these are pleasantly comfortable and cosy for the body and mind. The urban people, living in the air-conditioned microenvironment of their well-appointed and well-lighted modern houses may feel physically and mentally restless and sick, while the village folks, living in their traditional houses, are physically and mentally balanced and cheerful.

In the sub-mountainous doons, the houses are generally single storeyed, for ample flat area is available around for the houses to extend horizontally. The houses are located individually, spaced apart from each other by the fields. Most of the people in this area are agrarian folks and most of their activities are earth-bound. Therefore, single storeyed houses are convenient for them. Further, single storeyed houses blend well with the flat topography of the doons, causing no obstruction to the flat landscape. However, economic factors also have a role to play in deciding the number of floors. Some double storeyed houses may also be seen in the doons, but the people are sensitive enough to camouflage such houses with the foliage. They plant flower and

fruit bearing trees around the houses so that the houses may not look offensive in the overall natural setting. In fact, the common village folks of this region, as elsewhere, are intuitively conscious about living in harmony with nature, and they usually would not do anything sacrilegious to Mother Nature.

In the structural basin of the Kangra region, where the topography is undulating, with an abundance of streams, water channels, and a higher rate of precipitation, one may find large stretches covered with dense foliage. Under such conditions, the houses are built either on the higher terraces or on the well-drained level ground. In such an environment, a single storeyed house may look dwarfed and sunk amidst the surrounding foliage. Therefore, most of the houses in such an area are double storeyed structures. Such buildings not only stand out among the foliage, but also get sufficient sunlight and air, exuding a feeling of airiness and openness. In such houses, most of the living area is on the upper floors, the ground floor being left only for sundry use.

In the foothill belt, a typical geoclimatic and physical condition prevails in a small area on the border of Hamirpur, Bilaspur and Mandi districts. Not only is the topography of this area mountainous, rugged and rocky, but the climate also remains arid and hot for most part of the year, with acute shortage of water. In this area, neither timber nor stone is available in plenty. These people have been using bamboo for their houses, built on different terraces in a clustered formation. These houses are mostly double storeyed structures covered with pent roofs. This layout pattern and elevation blends harmoniously with the mountainous topography.

In the mid-Himalayan zone, a single storeyed house may be a rarity, but double storeyed houses are common. The house of a joint family household and of the affluent families may even have three or more storeys. Such multi-storeyed houses are common in lower Kinnaur, but are generally rare elsewhere in this region. The level stretches in this area are scarce, which leave no scope for houses to expand horizontally. Therefore, the only option to make more room for accommodation is to raise the building vertically in multi-storeys. Under the constraints of the mountainous topography, most of the residential houses in this region are built in a linear formation on different terraces along the contours. Such houses normally face the valley. However, wherever large flat patches are available on the mountain spurs or in the valley, houses in clusters may also be seen. The area is predominately populated by the Khasha people with their distinctive type of domestic architecture. The Khasha houses have a typical layout pattern, their characteristic elevation and organisation of internal space that caters to

their traditional joint family system and agro-pastoral living style. Thus, the ground floor is used for the livestock. They also have a spacious and well-maintained courtyard (*khwala* or *khalyan*) in front of their house to take care of the agrarian chores. In such houses, wood has been used extensively and liberally, that qualifies them for inclusion in the wood-based architecture. Another functional peculiarity of the Khasha house is the entresol or mezzanine – an intermediate floor between the ground and the first floors, locally known as *pand*. This hidden floor not only serves as the winter living area for the family, but also serves as a secure storage place.

In the trans-Himalayan area of Ladakh, Lahul and Spiti and upper Kinnaur, the houses have two or more storeys. Located on the tablelands in the valleys or on the convenient mountain ledges, most of the houses here are in clusters. While the ground floor of these houses is used for keeping cattle and storage of fodder, and so on, the upper floors are used for living. The approach to the upper floors is always from the room on the ground floor. Rarely does one find an open and external approach to the upper floors. On the upper living floors, open terraces are also provided for sitting under the sun during the chilling winter months. The rooms, though spacious, are normally without windows, and where the windows are provided, care is taken to orient them towards the sunny side and keep them small in size.

In the traditional scheme of the residential house, there is no provision for a separate bathroom. A part of the kitchen or the kitchen sink (*chala*) is used by the womenfolk for that purpose, and the male members are required to take their occasional bath in the open. The toilet is conspicuously missing in the traditional scheme. However, the scenario is different in the trans-Himalayan interior, where every house has an attached dry toilet (*chhara* or *chhakcha*) on the first floor, with a 'pit' on the ground floor to collect the night soil.

The people generally take care of the orientation while laying out their houses; they prefer an east facing front for their houses. Nevertheless, the local site condition is usually the deciding factor. In the mountainous topography, where the ranges are spread in a criss-cross form in all directions, it is certainly not possible to follow this rule-of-thumb. Nevertheless, people generally consult the family Brahman for an auspicious date and time and the direction which the proposed house should face. However, the people would follow the directions of the Brahman in fixing the date and time for laying the foundation, but remain complacent about the orientation. People usually build their houses with the front facing the valley. However, when sufficient open space for

the fronting courtyard is not available, the house may face another direction, where sufficient open land is available for the fronting courtyard.

In the mountainous interiors, where level stretches are rarely available, the houses are built on different terraces along the contours. People take care that the ground profile is least disturbed, for they know that disturbing the natural repose may be disastrous for the stability of the structure. That may explain why the houses built on the terraces blend so harmoniously with the natural mountain profile. Mostly, building a house near the inner curve or the concave profile of the mountain slope, where the perennial natural watercourse exists, is not preferred. Being prone to damage by sliding rocks and slips, such sites are considered unsafe for the residential houses, but these are the most appropriate locations for the *gharat* – watermills for grinding grains. The safest site for the construction of a house on the mountainous slope is considered on or nearer the outer or convex profile, where the site is sunny, soil strata stable and hard. Obviously, most of the villages in the interiors are located on such mountain ledges, spurs and saddles.

In the clustered arrangement of houses, these may face each other in a convenient manner. Most of the clusters are a group of the houses belonging to the same clan or community. These houses are spread in a radial manner around the central ancestral household, from where the families dispersed and around which they built their houses. Thus, in one village, there may be several clusters located at different places, separated by the fields, groves, and so on, but linked with the village paths. Such clusters are known as *patti* (hamlets) in the vernacular parlance. In the traditional village setup, usually the houses of one community are located separately from the other; the houses of lower-caste communities are at lower locations. The stratified location of these *patti* is a usual village feature in the Himalayan interiors. In the undulating foothill region, the distinction is followed by clearly separating the houses of one community from the other.

In the traditional scheme of domestic architecture of this region, windows, ventilators, and so on, are considered irrelevant, and therefore such openings are normally missing in most of the traditional houses of the middle and trans-Himalayan regions. When such openings are provided in the lower floor, these are no larger than a man's head, and even on the upper floors, these are fewer and not of a large size.

The regular stairs have been a rarity in many traditional wooden houses in the interiors. One has to step up on a portable stepladder. Such a stepladder is known as

the *phainte* or *shairta* in different parts of the mid-Himalayan interiors, and as *chapna* in the trans-Himalayan region. Such stepladders lead to an opening on the floor, where a trapdoor (*chobu*) is provided. Such ladders are made of the one-piece unhewn and sturdy wooden log of deodar wood, on which notches are cut. During the night and in case of danger, the ladder is pulled up into the house.

From the foregoing discussion, it is clear that the people consider their houses as living entities – the *griha devta*. Built through the community participation, and after occasionally invoking the divine grace, these houses not only represent the pragmatic involvement of the community, but also reflect their faith in the local deities. The site for the house and the auspicious day to start construction are selected mostly by divination or by the family priests. The quadratic layout is normally preferred to effect economy. While, generally well-ventilated single storeyed houses are preferred in the foothill area, in the interior valleys, the traditional houses have smaller doors and minimum windows for the reason of security and for protection against the inclement weather conditions. In the trans-Himalayan cold desert, windows and ventilators are generally conspicuous by their absence in the stark box-type houses set in the barren topography.

THE METHODS OF CONSTRUCTION

THE TRADITIONAL HIMALAYAN DOMESTIC, AS WELL AS RELIGIOUS, ARCHITECTURE is essentially earthbound, having evolved organically from the ecosphere around. The construction material – earth, stone, grass, wood, and so on – is locally available. The people arrange ordinary timber from the trees grown by them on the edges of their terraced fields, or they get superior quality timber, such as deodar, from the specified forests on nominal customary *bartandari* rates. Even the finishing material, such as earthen colours – *golu*, *losti*, clay, and so on – is available locally. Thus, little effort and money is needed to construct a house in the traditional style. Even the manpower needed for construction was available just for the asking, based on the traditional system of reciprocal community participation, known variously as the *kewar* or *saret*, *dar*, *juwari*, *haila lagana*, *ttbela*, *daruch* or *buara*, and so on, in different parts of the Himalayan region. Although these terms broadly imply community participation, the *kewar* and other terms mentioned above signify the construction of a house or other major agrarian and household chores of an individual family, which they cannot perform on their own in a timely manner. The *ttbela* signifies community participation for hosting guests of an individual family. Under the reciprocal community system, days are mutually arranged for contributing labour. Each household in the village provides one male member. All the men, so engaged, are treated to meals by the host in the evening. In the interiors, even *sur* (homemade liquor) may be served. In some interior areas, as in the Gadderan area of Chamba, even woodwork was done under that system, without engaging any skilled persons for the job. In other parts, where a *thawin* or *baddhi* is engaged for the

skilled job, he is compensated more in kind than in cash under the customary system. It is for this reason that even the poorest of the poor in the Himalayan interiors had his own house and he never felt desperate or lonely even under the most critical conditions. The village fraternity was always there to help each beleaguered soul.

The choice of material, construction method and the architecture of the house varied according to the local availability of material under different biophysical settings. For instance, in the subtropical environment of the Kyarda Doon (Paonta Doon) area of Sirmaur District, most of the traditional houses (*kotha*) have been made of boulders, mud, thatch, reed, bamboo, and so on, only. In the mid-Himalayan zone, where timber from the deodar forests is plentifully available, the houses are largely made of wood. In the trans-Himalayan interior, where neither good structural stone nor wood or thatch is available, the houses are predominantly mud-built. Thus, there is a great diversity in the choice of material and the method of construction, right from the laying of the foundation to the roofing and completion. The building materials and construction methods will be discussed in the following sections.

THE FOUNDATION

Preparing the foundation of a house is an important and crucial matter for the happiness and wellbeing of the family who will inhabit it and for the stability of the structure itself. The people of the region are generally very particular about the sanctity of laying the foundation, and to ensure that nothing untoward happens during construction and subsequently, when the house is occupied, they take all precautions. The family Brahman is always consulted to find out the most propitious day and time for laying the foundation. Normally, before laying the foundation stone, a *pooja* is necessarily performed everywhere, generally in the same manner. In most parts of this region, the Brahman oversees the ritual, but in the Buddhist trans-Himalayan region, the lama officiates over such a ceremony. However, in certain localities, this ritual is performed according to the local custom. For instance, in the highland tract of Kyarda Doon, people get the *griha-kundali* of the proposed house prepared. That *kundali* is placed within the layout of the proposed building, and the *bhoomi-pooja* is performed. Thereafter, the foundation stone (*shila*) of the prescribed size is planted at the place indicated by the officiating Brahman.

In the totem-ridden trans-Giri area of Sirmaur District and Jaunsar-Bawar area of Dehradun District, it is customary that at the time of laying the foundation stone, the *baddhi* must secretly lay the first two stones with a gap in between them to ensure a safe passage to the ominous snake, which, it is believed inhabits the site. The underlying idea might be to provide an outlet to the subsoil water encountered while digging the foundation. People in the interiors of the Shimla District, especially in the Pabar watershed, also believe in protecting the foundation against the evil eye. They ensure that no person, even the owner afflicted by *Shani* (Saturn), should enter the site demarcated for construction after the foundation has been dug. Therefore, constant vigil is kept on the foundation until it is filled to ensure that no one puts an evil charm in it.

In the lower Kinnaur area, the foundation stone is always planted on the right side of the main entrance of the proposed house. In the trans-Himalayan interiors, the lama declares the name of the person who should lay the foundation stone. No goat is sacrificed in the aforementioned rituals, but it is not so in the Gadderan area of Chamba.

Among the Gaddi, however, the rituals are not complete unless a goat is ritually sacrificed. The carcass of the goat is dragged along the perimeter of the proposed house, leaving a trail of blood, demarcating the layout. They believe that evil spirits, hovering around are pacified by the ritual, and they will not create any problem during construction.

Thus, there are various traditions and practices regarding the religious ceremony performed at the time of laying the foundation stone, but the underlying idea behind these sacraments is to insulate the site and the proposed house against the evil eye and pernicious omens so that the inmates may live peacefully. Sweets are always distributed on such occasions. That completes the formalities of ritually sanitising the site. After that, the actual work of digging the foundation (*niyun*) is taken up.

However, these rituals are totally dispensed with in certain places, as in the Kyarda Doon for the humble mud-built thatched dwellings of the Labana. For erecting a *kotha*, only a small piece of elevated land is needed. The foundation is dug about 60 cm to 90 cm deep. It is then hand-packed with boulders up to the ground level. Over that, a plinth course of random stones is laid in mud mortar. Over that, rammed earth walls are raised.

The Koli of Kyarda Doon, unlike their Labana counterparts, perform religious rituals before starting construction work. They dig the foundation to a depth of about

60 cm to 90 cm depending upon the foundation strata. The trench is then filled with hand-packed rubble stone and grit, available from the local conglomerate strata, up to the ground level. However, care is taken to ram the filling at various stages. Rarely is watering done. Above the ground level, the same random rubble stone and grit is laid dry in courses up to the plinth level at about 30 cm to 60 cm above the ground.

The Muslim Gujjar of Chamba hardly bother much about building their *kotha*. The work of digging the foundation (*neeh*) is taken up straightway on the sloping ground, without bothering about the levelling or development of the site. The earth is dug about a metre deep and filled with random stones up to the ground level. Upon that filling, they directly raise the superstructure without much ado. The thickness of these dry masonry walls of schist stones varies between 60 cm to 75 cm. Although this stone is unsuitable for structural purpose, the Gujjar do not seem to care. The walls are raised up to the roof height without using wooden binders or wall plates. However, in quite a few dwellings, the author also found wooden wall plates casually inserted into the masonry.

Among the Muslim Gujjar, the traditional way of laying the foundation is very naïve; it rarely goes beyond 30 cm into the ground even for a multi-storeyed house. As the sterile topsoil is thin, the rocky stratum is easily found; it has enormous load bearing capacity to hold up the superimposed dead load of a three or more storeys high building. After the foundation is dug, large and thick mica-schist stone slabs are hand-packed in the trench. The process is repeated until the fill reaches a few centimetres above the surrounding ground level, and this completes the foundation laying. That traditional time-tested style of preparing the foundation is similar to that in the Gadderan territory, which is rarely seen elsewhere. In fact, old buildings built in the traditional style with such flexible foundations have withstood many tremors and vagaries of nature, including the disastrous Kangra Earthquake of 1905.

In the Jammu-Kangra area, preparation of the foundation is a serious matter, and is taken up methodically. The foundation is dug about a metre deep. The width of the foundation trench varies from 60 cm to 75 cm. It is then adequately saturated with water and vigorously rammed, followed by hand packing of boulders (*bharti*) to a thickness of about half a metre. Every layer of boulders is packed with binding material and flooded with water to plug all voids and gaps. It is then thoroughly rammed with a heavy iron or wooden mallet (*durmat* or *mungaree*) to ensure compaction. At some places, people prefer to keep the foundation exposed to the summer rains so that it is properly settled and weathered, after which it is further rammed.

Over that base, random rubble stone masonry is laid in mud or lime mortar up to the ground level. At the ground level, an offset is provided to restrict the width of the wall to about 60 cm for the superstructure. It is further reduced to about 45 cm by an offset at the plinth level. The height of the plinth is generally restricted to about 22 cm and 30 cm in the rocky, uneven and well-drained locality on the slopes of Dhauladhar, but it may be as high as 45 cm to 60 cm in a locality where the ground is flat and susceptible to capillary action of water.

However, in the Jammu-Kangra region, where the subtropical and arid climatic conditions prevail, the foundations (*kbali*) for the houses are prepared with minimum use of water. In such an area, after the foundation has been dug to the required depth, proper ramming is done to make the surface even and compact and is then left to weather, for some days. It is then hand-packed with river-borne boulders and grit. Over that, a wall of random rubble stone masonry is dry-built up to the plinth level.

In the Pabar watershed of Shimla District, where the soil strata are generally rocky, the foundation is no deeper than half a metre and no wider than 45 cm. Similarly, in the trans-Giri area of Sirmaur and Jaunsar-Bawar area of Dehradun District, where the soil strata are normally hard and rocky, the foundation is no deeper than about half a metre. In such areas, the trench is filled with coarse gravels mixed with locally available gritty clay, and is thoroughly watered and rammed. Over such a bed, solid random rubble stone masonry in mud mortar is made up to the plinth level. The height of the plinth is normally kept to about 30 cm above the ground. At the plinth level, the thickness of the walls (*bbitt* or *kandb*) is about 30 cm to 45 cm. Elsewhere in this area, after the foundation has been dug to a depth of about 80 cm, full-width stone masonry in mud or lime mortar is laid straight up to the plinth level, without providing any levelling course of filling.

In the upper Satluj Valley, covering the outer Saraj area of Kullu, Rampur area of Shimla District and the lower Kinnaur, where the soil strata on the rugged mountain slopes are very hard, the foundations are no deeper than 90 cm, and the width of the trench is restricted to only about half a metre. It is filled with dry-stone rubble or hammer-dressed coursed rubble-stone masonry. The substructure is thus raised up to the plinth level. However, the foundation is prepared in a different manner in the upper Kinnaur, where it is normally excavated up to 60 cm to 90 cm, depending upon the availability of firm stratum. It is then filled with stones. As most of the houses are

built along the mountain profile, the ground and plinth remain at the same level. Thus, the walls for the superstructure are raised straightway from the ground level.

In the trans-Himalayan zone, the foundation is dug to a depth of about 90 cm with a width of about one metre. It is then flooded with water and allowed to stay exposed that way for some days, to ensure that all the underground cavities are plugged. The bed is then rammed to compaction by trampling and jumping on the trench, in which even the children are allowed to play. To make the bed compact, heavy stones are repeatedly thrown in the trench. Once the bed is compact and smooth, stone masonry in mud mortar is laid. Mostly coursed rubble stone is used on the outer edges of the wall, but the core is filled with rubble stone masonry, with a copious amount of flowing mud mortar. However, at such sites, where the hard and rocky strata are exposed, normally *no digging is done*, and the coursed rubble or random rubble masonry walls of variable thickness are raised directly on the rough surface of the rocks, and the walls are taken to the desired height to cover all the rough edges of rocks within the perimeter. The entire area between the walls is then levelled smooth. Above the levelled surface, walls of the superstructure are raised straightaway.

THE WALLS

Four different types of walls are discussed in the following subsections. These types are characterised by the materials used in their construction. Thus, there are the mud walls built in position at site, that is, the *in situ* mud walls. At times, pre-moulded sundried bricks of various sizes are used for erecting walls. Both these types are common in the foothill and the trans-Himalayan regions, but uncommon in the mid-Himalayan interiors. At some places in the foothill region, especially in the western part, bricks are being increasingly preferred over the conventional construction materials for various reasons. Nevertheless, stone has been the staple material for constructing walls in most of the Himalayan region. In the mid-Himalayan region, where wood has been available aplenty, it has been combined with stone to construct composite wood-and-stone walls. Depending upon the method of construction, such walls have been identified as (1) the *katth-kuni*, (2) *dhol-maide*, and (3) *faraque*. Then, there are the walls fabricated completely by using a wooden framework. All these types are discussed in detail in the following subsections.

The In Situ Mud Walls

The simplest type of structural wall is the one that the people make themselves, without involving skilled hands, in the sub-montane belt and the trans-Himalayan region. Such earthen walls are popularly known as the *matkanda*. In Jammu-Kangra area, such a rammed earthen wall is known as the *bhittwali chinai*. To prepare such a wall, a mixture of the locally available well-pulverised clay, rice husk, chopped rice chaff or grass is mixed with mud. After the mud is ready, two sturdy wooden planks are positioned horizontally on the wall of the substructure to define the width of the proposed wall. The space between the shuttering is filled with kneaded earth. To make the filling compact, it is thoroughly rammed with large wooden mallets, locally called *mungaree*. Sometimes, small pebbles are also embedded in the fill. To hold the shuttering in position, it is secured by make-shift frames at three-four places. The frame is made of two horizontal wooden battens with holes. The spacing between the holes defines the thickness of the wall. In the holes, vertical battens are inserted to make a four-sided frame. After the filling at one place is complete, the frame is disengaged and the shuttering shifted to the other place, where it is again secured in position by the frames. In this manner, one course of the filling is completed. The course is allowed to settle and dry to take the weight of the succeeding course without bulging. The process is repeated course over course to complete all the walls until they reach the desired height. Care is taken to ensure that the course from one side is overlapped by the succeeding course from the other side at the corners, so that the corners are properly tied to make an integrated structure. The courses are not laid exactly one above the other evenly in a straight wall, but these are staggered to ensure overlapping. The holes formed in the wall by the horizontal wooden batten of the frame are later plugged at the time of plastering.

The 'reinforced' rammed earth walls are made to serve as thin partitions. For this purpose, a network of bamboo strips or the split stalks of *kabi*, *kan* or *kans* is used as reinforcement. The network is erected in position, and then lumps of hard mixture of mud and cow dung are filled in the gaps. When the filling is semi-dry, the network is plastered on both sides with a thick mud mortar (*gara*) and finished with the clay and cow dung solution.

In the remote trans-Himalayan region, the internal walls of *dzod* (store), and various other secondary rooms, which are normally not used for living, are made thinner to increase the living area. Such 'partition' walls are made of 'reinforced' mud. For this

purpose, willow twigs are woven to form a net for the 'reinforcement' and the net is erected and secured in position. Mud mixed with binding material is then filled in the gaps of the net and plastered on both sides to the required thickness. Such lightweight walls can be erected anywhere on the upper floors without worrying about the weight of the base.

The in situ rammed earth wall is not exclusive to the Kyarda Doon (Paonta Doon) and the sub-montane belt only, but in the far-flung trans-Himalayan region, earth constitutes the staple construction material. Because of dry and cold climatic conditions, there is almost total absence of any type of cognisable vegetation in Ladakh, Spiti, upper Kinnaur and part of Lahul. Therefore, the construction materials popular in that region are the roughly hammered mica-laden schist gneiss, sunbaked mud bricks and clay. Wood is used only where its use is unavoidable. This construction material is widely used not only in the trans-western Himalayan region, but has been the traditional construction material in the vast area extending over the Tibetan mainland and the larger part of Central Asia, where similar geo-climatic conditions prevail.

Houses built of the in situ rammed earth walls have been very common in upper Kinnaur, Spiti and Zaskar areas, but not in the Lahul and Ladakh, where sundried mud bricks or random rubble stone masonry in mud mortar is quite common. Nevertheless, in situ rammed earth remains the staple wall construction material in the trans-Himalayan region. In this area, earthen walls are built to great heights, often in many storeys. The castle-palace of Leh, made of sloping earthen walls propped up with buttresses, is an outstanding example of such a towering structure. Besides that, several hilltop castle-monasteries were also built in this style. The monasteries at Ki and Dhankar in Spiti and Hemis, and Tikse in Ladakh, respectively, are some good examples of that type.

In this region, the method of making the earthen walls is slightly different. The earth available in the area is generally sandy clay, with mica content. The adhesive power of the earth is very poor, but it makes a good plastering material when some binding material and a special type of sticky alluvial clay, known as *markula* or *tua* is added to it. The mica content lends a smooth glossy effect to the finished surface. To make the clay sticky, chopped chaff of barley is mixed with it. At a few places, *markula* or *tua* is also mixed with the local earth to increase the bonding strength.

The same process, as noted above for erecting *matkanda*, is followed when wooden planks for shuttering are available. However, due to the acute scarcity of wood shuttering, 'planks' are now mostly made of woven willow twigs. To hold the shuttering in position,

it is secured at three-four places by makeshift wooden frames; two horizontal wooden battens with holes at the ends are made according to the wall thickness. In the holes, vertical sticks are inserted to make a four-sided frame. After the woven shuttering is fixed, moist mud is packed into it and the filling is made compact by stamping. Where stones are easily available, broken angular stone pieces or pebbles are also mixed in mud. After the fill stabilises, the shuttering is disengaged and shifted further on, to repeat the process until the wall reaches the required height. In some existing houses, such in situ walls are also built with a batter so that the base is thicker than the top (Figure 7.1).

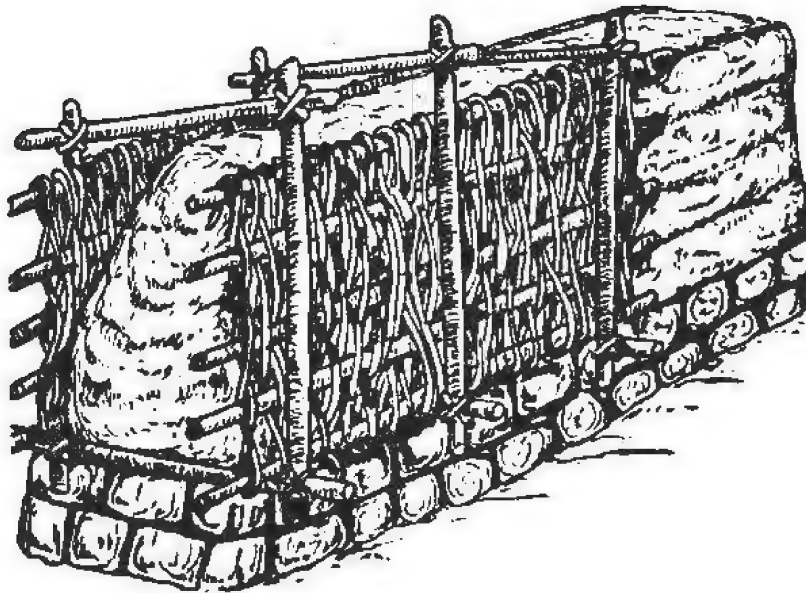


Fig. 7.1: The woven shutterings of twigs for in situ mud walls

The holes formed in the wall by the horizontal wooden batten of the frame are usually left unplugged in most of the residential houses, for the walls are mostly left unplastered, and the embossed woven pattern of the woven shuttering is clearly visible on the surface. However, some people plug the holes with lumps of mud at the time of plastering. In fact, the people of the trans-Himalayan region are not too bothered about the finishing of their houses, but take meticulous care in finishing their temples and monasteries.

Sundried Mud-brick Walls

A better substitute for the in situ earthen walls is the wall made of sundried mudbricks. Houses of sundried bricks are found in a very extensive area spread over the outer hill region and in the trans-Himalayan interiors. Although the method of manufacturing those bricks is almost similar in both the outer hills and the trans-Himalayan regions, yet there is much difference in the quality of basic material and the sizes of the bricks. In the outer hill region they use bricks of smaller size, but in the trans-Himalayan interior, they are much larger.

In the outer hill region, good quality gritty ochreous clay is normally available everywhere, which is the most suitable medium for making good quality bricks. There is no hard and fast rule about the size of bricks, and it varies from place to place according to local preferences. Usually, bricks measuring 30 x 10 x 8 cm are preferred in the outer region. However, in some parts of Jammu-Kangra region, bricks of 26 x 12 x 6 cm size are popular.

To manufacture bricks, locally available sandy clay from the fields is pulverised and sieved and mixed with chopped chaff and kneaded thoroughly. The mud paste so prepared is allowed to mature and season for some days. Lumps of mud, with embedded small pebbles are then pressed into the wooden collapsible moulds (locally known as the *farma*), placed on an even surface. The mould is a sort of detachable wooden frame. After the mud is packed into the *farma*, it is disentangled, exposing the bricks for drying. The *farma* is then reassembled at another place to prepare another brick. When the bricks are semi-dry, they are turned to stand on edge to ensure uniform drying. This is the process of making good quality bricks in the outer hill region. They are strong, stable and weather resistant for which good quality of clay is largely responsible. These bricks can be used dry, but usually mud mortar is used for joining them.

In the trans-Himalayan region, sundried mud bricks are used commonly in Lahul and Ladakh areas. In these places, for about 1 m height from the ground level, random rubble stone is generally used, but above that, the whole structure is made of sundried bricks, generally measuring 45 x 20 x 15 cm in size. These bricks are laid in mud mortar, made of local soil. If available, the alluvial clay, *markula* or *tua*, is also added to make the mortar sticky. In fact, the quality of clay in the trans-Himalayan interiors is generally extremely poor. Despite the heavy dose of binding material (chopped barley stalks, and so on), the clay does not provide suitable material for making bricks even after repeated mixing and weeks of seasoning and maturing.

Preparation of sundried bricks is a specialised job in the trans-Himalayan areas, for which skilled artisans are engaged on a contract basis. The women folk and children of these artisans also work. The women and children bring clay, pebbles, and so on, from the fields, and the men folk prepare the mud and do the moulding work. The mould is a simple collapsible wooden box, open from the bottom and top. The earth after having been cleaned and seasoned with the binding material is made into a sticky mortar. The inner surface of the mould is dusted and a lump of mortar is put into it and patted with hand. The mould is then immediately lifted, leaving the brick exposed on the ground. After the brick is semi-dry, it is turned to stand on edge.

Brick Walls and Stone Walls

Fired bricks have very rarely been used in the traditional residential houses in this region. Only a few houses in the urban areas of Jammu-Kangra region and other sub-hill tracts, especially in the outer parts of Solan and Sirmaur districts, were made of burnt bricks brought from outside. The technique of laying bricks was also imported. The local artisans learnt that technique from the brick-masons of the nearby places in the plains. Of late, brick kilns have come up at several places in the outer parts of this region, bordering on the plains. People are now increasingly using fired bricks almost everywhere in the region, even in the trans-Himalayan interiors. In fact, the brick has lately emerged as the most popular house-building material in the region, for the brick wall occupies lesser area than the conventional wall, its construction is speedier and more economical. Of course, the immediate advantages of bricks are alluring, but how well the houses built of walls that are half a brick thick, placed between the RCC framed structures in the interiors shall stand the ravages of time and quakes, is yet to be seen.

Stone has been the time-tested staple construction material for the houses in most parts of the Himalayan region. In the western Himalayan region, north of the Vindhyachal Range, the structural ranges and glens in the *tarai* belt have been home for one of the finest qualities of the fine-grained blue sandstone. The monolithic rock-cut temple-complex at Masrur in Kangra District is the singular example made of fine grained sandstone north of the Vindhya Range. The colossal statues of Kuber and Yakshi, installed at the main entrance of the Reserve Bank of India building in New Delhi were sculpted out of the stone blocks quarried near Baijnath in Kangra.

Understandably, stone should be the traditional staple construction material in the outer Himalayan region. In fact, stone has been extensively used in the traditional residential houses, temples, palaces, forts, bridges, and so on, in this area. One may find some of the finest stone-built houses at many places in the sub-Himalayan belt. Good examples of stone-built secular edifices still exist at Mandi.

In the residential houses, stone has been used in various forms – ashlar, chiselled, hammer dressed, random rubble, and even raw – with or without mortar. In some of the ancient buildings, stone has been used with a specially made mortar, prepared with the paste of ground lentil (*urad* or *mash*) seeds, albumen of egg, *mastangi* (a local resinous substance), crushed bricks (*surkhi*), lime, and so on. After this, lime-*surkhi* became popular as a binding material, going out of vogue only with the introduction of cement. However, prior to the introduction of mortar, stone blocks were joined with copper dowels and joggles. In some of the ancient classical stone temples of the area, the clamping technique has been used. However, in most of the traditional residential houses, the stones have been laid with mud mortar or lime-*surkhi*, lime or (and now) with cement mortar. Of course, mud mortar has been the most popular. In most of the houses, hammer dressed or random rubble stones are used with mud mortar for the structural walls. The thickness of such walls in the residential houses is between 45 cm and 60 cm. In order to ensure uniform distribution of load, in most of the cases, single wooden wall plates have been built into the outer edges of the walls.

In the mid-Himalayan region, good stone for structural purposes is not available. The type of stone available in that region is mica-laden schist from the metamorphic deposits. This stone has poor structural quality and poor load-bearing capacity. It can be neither dressed into proper blocks nor does it take any mortar. It can only be laid flat without mortar. Therefore, the people of this region have been using it with caution, by combining it with the wooden framework in various manners, depending upon the nature of the structure. However, most of the *kotba* of the Muslim Gujjar of Chamba are built with the locally available schist stone. They use this stone without mortar; usually without a wooden wall plate.

In the Lahul area, people use the local hard crystalline stone obtained from the slopes near rivers and streams. That hard stone is tough to handle, but can be dressed into a block by hammering. They use this stone with the wooden *cheol*, spaced apart in the style that is locally known as the *dhol-maide*.

Composite Wood-and-Stone Walls

In the mid-Himalayan region spread over a vast mountainous temperate zone, structural timber has been plentifully available from the deodar forests. Consequently, there are ancient and contemporary buildings – residential houses, castles and temples – all made with lavish, at times even extravagant, use of wood. Even the walls are made with wood and stone combined together, in which the wood weighs heavier than stone. In case of some ancient and contemporary temples, wood has been used from bottom to top. The ancient wooden temple of Maishur at Sungra in Kinnaur, and the recently built temple of Kandi Ghatasan in the Village Siwa-Badar in Mandi are the most prominent examples in this regard. Possibly, prior to the technique of combining wood and stone in wall construction, all residential houses in the interior of the mid-Himalayan region were made of wood. This fact is well-attested by the ancient wholly wood-made residential houses still in habitable condition in the interiors of the Mandi, Kullu, Shimla and Kinnaur districts of Himachal Pradesh. A large number of ancient and contemporary wooden temples may also be seen. With an abundance of good quality timber from the coniferous deodar jungles and the inherited expertise to handle wood in diverse manners, the traditional artisans could hardly think of economising its use. Possibly, the overexploitation of the precious deodar jungles might have necessitated economy in the use of wood for the residential houses. It is learnt from the records of pre-modern feudal times that certain local rulers had imposed strict restrictions on felling of timber within their territories. The severe penalty prescribed by the ruler of Jubbal state in the Shimla Hills for felling timber may be an example in this regard. Under such restrictions, the use of stone for the construction of walls was considered as an alternative.

However, the mica-laden schist stone that is ordinarily available from the quarries in the mid-Himalayan region is of very poor quality for structural use. Thus, it is regarded unsuitable for constructing long-lasting buildings, but has generally been used for erecting secondary structures, such as cattle-sheds or for constructing earth-retaining structures. Therefore, the local traditional artisans devised a very ingenious way of economising the use of wood, by using wood and stone together. While stone significantly reduced the consumption of wood in the construction of walls, the wood took care of the uniform distribution of superimposed load, solidity of wall and its lateral stability. In this technique, wood and stone came to be used in various proportions and

in different combinations, depending upon the height and function of the structure. Thus, three types of composite walls have become common in this region.

Besides these composite wood-and-stone walls, purely wooden staggered walls and panelled walls have also been common in the interiors of this region, especially in Shimla and lower Kinnaur. Such walls are built only on the upper floors. Depending upon the combination of wood and stone in such walls, these are popularly known as the (a) *Katth-kuni* wall, (b) *Dhol-maide* wall (c) *Faraque* and (d) *Wooden* wall.

The Katth-kuni Walls

The most common type of wall has been the *katth-kuni*. The term *katth-kuni* is a combination of two local terms: *katth* and *kuni*. The word *katth* is a dialectal variation of the Sanskrit word *kashtth*, which means wood and *kuni* is again a dialectal variation of the Sanskrit word *kona*, that is, an angle or a corner. Obviously, the *katth-kuni* wall implies that it should have its corners or angles of wood. Truly so, the *katth-kuni* wall (Figure 7.2) is made by laying apart two wooden wall beams parallel to each other longitudinally throughout the length of the wall to define its width. These wall plates are usually square or rectangular in section, with the thickness varying from 15 cm to 22 cm. In order to ensure a proper bond between the two parallel wall beams, cross-joists of length equal to the width of the wall are dovetailed or lap-joined to these, spaced suitably along the length of the wall. Earlier, no nail or bolt was used in joining these. To make the joints firm, wooden pegs were driven through the thickness of the joint, but now, the use of iron nails is common. Now, even these cross-joists are placed over the wall beams and secured by driving wooden pegs through the holes made in them or are simply nailed. This framework of side beams and cross-joists is known as *cheel* in the vernacular parlance of Shimla District. In the Kullu and Mandi districts, it is known as the *cbzalairi* or *patari*.

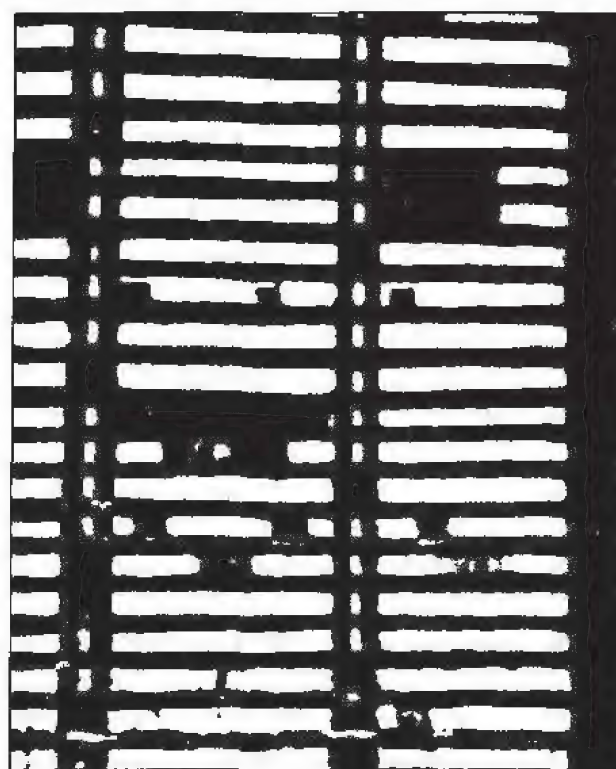


Fig. 7.2: Detail from a section of a *katth-kuni* wall

The gaps between the wall beams are hand-packed with stones laid flat. Over the *cheol*, a course of stone is meticulously 'packed' without using any mortar. Such courses of stone are known as the *maï*. The thickness of each stone course, sandwiched between the *cheols*, is always the same as that of the wooden *cheol*. That process is repeated one course over the other, to increase the wall height. A similar process is repeated for the cross walls also, but with a slight change: the *cheol* of the cross walls always rests on the *cheol* of the long walls so that these are one above the other at right angles at the corners. Thus, the corner is always made up of wooden sections resting one above the other, without any course of stone showing forth. The wooden corner of the wall is known as the *katth-kuna*, that is, the wooden corner. The *katth-kuni* type of wall is known as *doriya* in Kinnaur.

The Dhol-maide Walls

When the use of wood for constructing walls is to be minimised, dry-stone masonry walls are raised with the wooden *cheol* vertically widely spaced apart, so that there are a number of courses of stone between the *cheol*. Such a wall is known as the *dhol-maide* (Figure 7.3) in Kullu and as *chanai khandh* in Churah area of Chamba. The method of making the *cheol* remains the same as for the *katth-kuni* type of wall. The walls of many traditional residential houses in Mandi, Kullu and many other towns are built of such *dhol-maide* type of walls. However, such houses do not rise beyond two storeys.

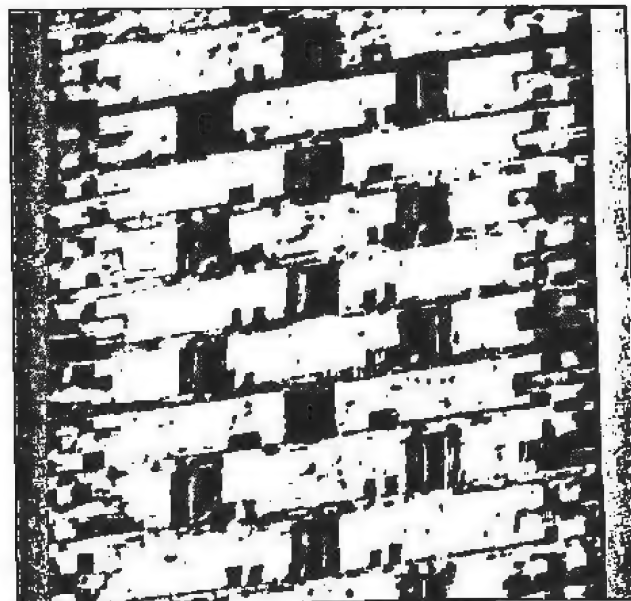


Fig. 7.3: Detail from a section of a *dhol-maide* wall

In most of the cases, the *dhhol-maide* type of wall is built only for the ground floor, while wood is used for the upper floors. However, *dhhol-maide* technique has been used with great advantage for making elevated solid stone plinths of the towering castles and other high-rise structures. The core of the plinth is hand-packed with dry stones. The *dhhol-maide* type of wall construction might have been very popular during the mediaeval past, to which most of the towering castles in the Himalayan interiors belong. In most of such castles, the plinth is exceptionally high, and built with the *dhhol-maide* type of wall. The mediaeval castles at Gondhala in Lahul, Morang and Labrang in Kinnaur are some examples of such structures, known for their commanding locations and height. However, the most imposing among the mediaeval defensive edifices is the one at Chaini, which has already been discussed in detail.

The Faraque

Excessive use of wood is not affordable for constructing houses in Kashmir Valley and the Chamba District in Himachal Pradesh, therefore, a method of erecting walls has been devised. In this, the use of wood is drastically minimised, but this is at the cost of the stability and durability of the structure. It is a sort of pillar-based construction, in which box-like wooden 'pillars', known as the *tthatthara*, filled with hand-packed stones are raised on the corner and in between at the nodal points. Between these pillars, a false wall of the thick and rough-hewn wooden planks or *tthatthar* (Figure 7.4) is provided. Such a wall of wooden planks is known as the *faraque*.

The *faraque* type of wall was common in the Kashmir Valley, where many houses built in that style still exist. In Himachal Pradesh, use of such construction is only confined to the Chamba District and the Gadderan area. Many such old residential buildings still exist in habitable condition in that area. Interestingly, the author came across a house under construction during fieldwork in the remote upper Tons Valley. There, beyond Mori, a *faraque* type of wall was being built for the first floor, which may be rare in that area. The *faraque* type of fabrication is only confined to residential houses, where such walls are generally provided for the upper floors only.

To fabricate a *tthatthara*, thick and rough wooden planks (*tthatthar*) of about 45 cm length, 40 cm width and 4 cm thick are placed on the edge on the two sides with a gap of about 40 cm, which defines the thickness of the wall. Over it, the same arrangement is repeated, but *tthatthar* are now placed across. The process is repeated until the proposed height of the floor is attained. Thus, a hollow space is formed within the box-like plank 'pillar,' which is filled with hand-packed stones.

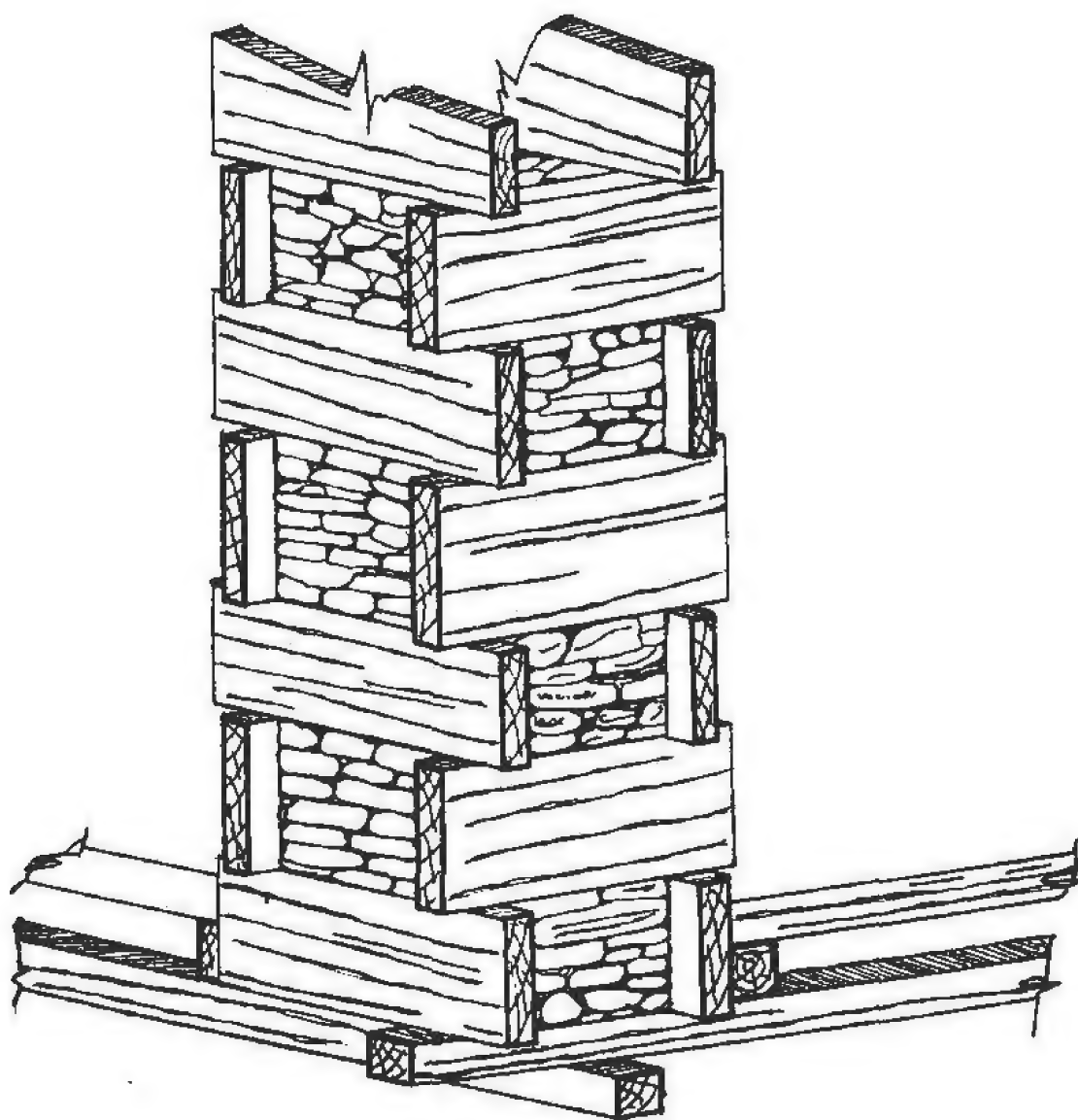


Fig. 7.4: The box-like wooden pillars or tthatthara

Sometimes, in place of the *faraque* – a solid dry-stone masonry wall is built. In such a case, the horizontal planks, called *cheol*, spaced one to one-and-half metres apart vertically, connect the *tthatthara* with each other. The gaps between and the space within the *cheol* are packed with dry irregular stone pieces. Such a solid wall is mostly constructed for the ground floor only. For the upper floors, generally the *faraque* are preferred.

Another substitute for the *faraque* is the *dhajji* wall. To fabricate a *dhajji* wall, a framework of wooden battens braced with diagonal battens is made between the *tthatthara*. The space within the wooden framework is then filled with hand-packed chips of stone

and mud mortar. Later, the gaps within the stone filling are plugged and the exposed surface on both sides covered with mud and cow dung plaster.

The *faraque* and *dhajji* style of fabricating walls is generally confined to the upper floors, for these are undoubtedly very vulnerable and insecure. However, being lightweight, the *faraque* and *dhajji* walls exert much less load on the foundations than the solid stone construction.

Wooden Walls

In the interiors of Mandi, Kullu and Shimla districts and in lower Kinnaur, it is common practice that the house is built in solid stone masonry or is of the composite wood-and-stone (*katth-kuni* and *dhhol-maide*) types. However, for the upper floors, either the wooden walls are made of planks fixed in panels or a staggered wooden framework with inbuilt doors, windows, cupboards, and so on.

The fabrication of the panelled wall is not a simple affair: it needs considerable skill and expertise. Fortunately, the hereditary *thawin* in the interior of this region are highly accomplished in handling wood and complicated joinery work. On the edge of the full width walls of the ground floor, a framework of sturdy joists is made. On this base framework, verticals are joined to the full floor height with the mortise and tenon joints. The top ends of verticals are secured with mortise and tenon joints to the framework of horizontal joists. In the structure so fabricated, battens are fitted to form square or rectangular panels, into which wooden panels are fitted. This process is repeated on the other upper storeys. The outer surface of these panels is usually carved tastefully in the traditional diction, depicting various geometrical, floral, faunal and figural forms and devices (Figure 7.5). The panelled walls are very light and exert little dead weight on the substructure and are stable against lateral movements, like earthquakes, besides possessing excellent insulating quality, but are vulnerable to fire hazards.

An improvement over a panelled wall is staggered walling. If one can afford it, one would prefer wooden-staggered walls for the upper floors as this type of wall fabrication not only increases the storage space in the inbuilt cupboards, but adds solidity, stability and strength to the structure without adding to the dead weight. Such wooden fabrication also keeps the interiors well insulated from outside temperature and noise. This type of wooden wall with intricate staggered framework and joinery can withstand all types of stresses and strains, but is highly susceptible to fire. To make such a wall, the framework of wooden joists and verticals is provided on both

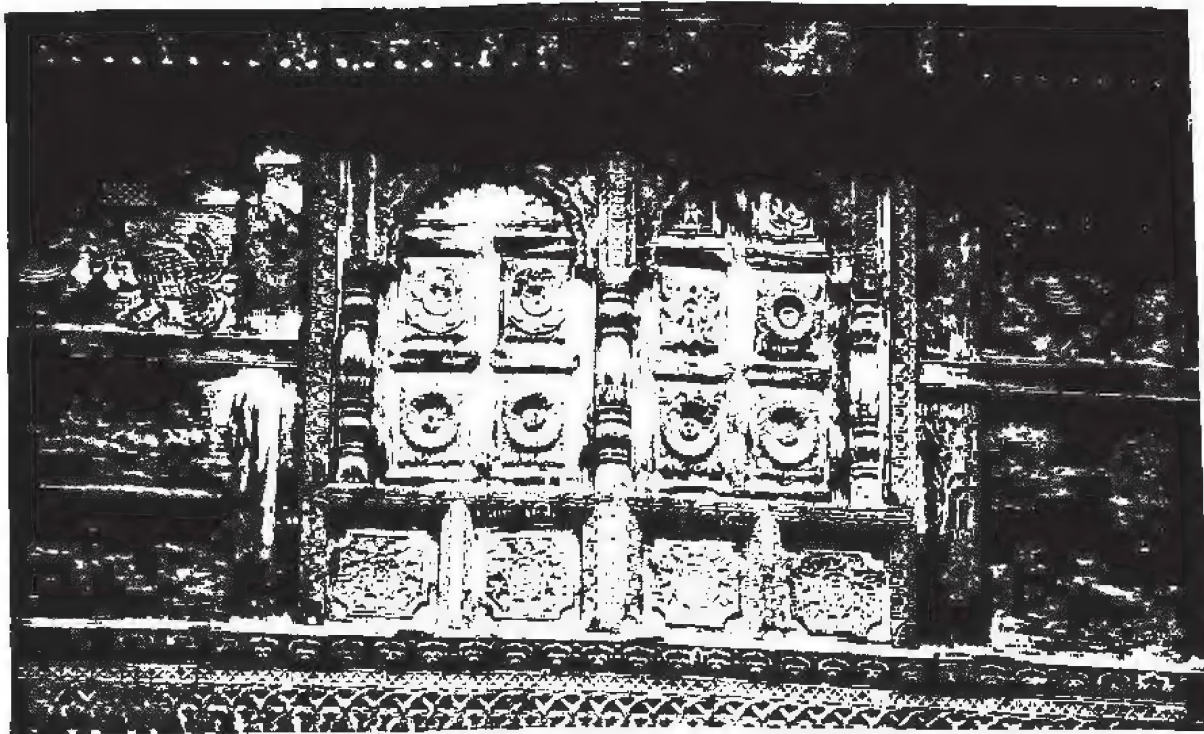


Fig. 7.5: The artistically carved wooden wall of a house in the lower Kinnaur

the edges of the full width walls of the ground floor to ensure that the full wall width is occupied by the framework of the upper floors. In this 'double' framework, the battens are jointed and the wooden panels fitted in them according to the plan. Thus, the space for cupboards, shelves, doors and windows is created within the framework by the staggering arrangement of the panels. Nothing can be better than a living floor built with staggered wooden walls, but for the cost of wood and the risk of fire.

ROOF LAYING TECHNIQUES

There has been a variety of roof-covering material locally available to the people to cover their houses with. With the exception of the trans-Himalayan region, a large variety of grass, suitable for thatching, has been economically and amply available in the entire Himalayan region. Next to thatch, wood has been the most popular and traditional roof-covering material in the mid-Himalayan region – evidence indicates that before the use of slate for roofing, all traditional houses had roofs covered with wooden planks. As the substitute for the wooden plank roofing, fine and thin slates came to be used as the roof-covering material at such localities, where it is reasonably

available. Nevertheless, the coarse varieties of slates are widely available in the entire mid-Himalayan region. In the trans-Himalayan region, where neither grass nor wood or slate is available, people have devised ways to use mud as the roof-covering material. A detailed discussion on all these varieties of roofing material and their application follows.

The Thatched Roofs

In the Kyarda Doon (Paonta Doon), the *kotha* are generally covered with *chhappar* or thatched roof. The thatched roof is also provided for the secondary huts, cowsheds, and so on, and at several other places in the outer and middle Himalayan region. For laying such a roof, a large variety of grass is available in the Kyarda Doon. The types of grass generally used for thatching are *bhabhar* or *bagar*, *sarkanda* (common spear grass), *khad*, *lamb*, *sargra khar* or *khar* (*Heteropogon contortus* Beame.), and others. After the *matkanda* walls are ready, a jungle wood log or bamboo is spanned across on the gabled sidewalls (*magri*) to serve as a ridgepole (*balla* or *ballee*). The jungle wood or bamboo poles are then placed over the ridgepole and the front and back walls. However, the rafters are projected about half a metre beyond the outer face of the walls to form a gable-end (*lotiya*). Mostly, logs of *sandan* and *sal* are used for this purpose. The rafters are firmly secured to the ridgepole by tying them together with a sturdy *maljan* vines. Over these rafters, thin wooden scantlings or split bamboo battens are tied with the *maljan* vines to form a sort of framework (*badondh*).

Once the framework is complete, the thatching is taken up. A thick base layer (*neeran*) of about 3 cm of thatch is spread uniformly, starting right from the gable-end to the ridge (*modian*). Over the *neeran*, about 15 cm thick layer of grass is evenly spread in a similar manner. Sometimes, a framework of thin bamboo strips is also provided over the grass to make the roofing one compact mass. Once the laying of grass is complete, the layers are carefully tied with the ropes (*ban*) made of *bhabhar* or *bagar* grass to the rafters, lest the roof be blown away by the wind. Sometimes, the thatched roof is prepared on the ground by laying grass in layers within the framework of bamboo strips and *maljan* twigs. Thus, the prefabricated *chhappar* is placed on the rafters and properly secured.

However, the Kolis of Kyarda Doon use another method for laying the *chhappar* over their houses, which requires some amount of skill. The *khad* grass, bamboo and *maljan* vines, the basic constituents of the *chhappar*, are abundantly available in the

locality. People harvest and stack *khad* grass in bundles (*pulla*) during winter, when it is dry. They also collect *maljan* vines from the jungle. These are made tender by keeping them underwater for about a week. Bamboo poles are also split into strips of various sizes. First, a frame of the unsplit bamboo is made. To that frame, bamboo strips are tied with the *maljan* vines to form a sort of latticework. The whole work is done on the ground and many frames are fabricated in this manner. The frames are then lifted to be securely tied to the roofing under-structure. Over the framework, a base layer of 3 cm to 4 cm thick *khad* grass is evenly spread followed by a 15 cm to 20 cm thick second layer of *khad*. The grass is always laid starting from the gable end towards the ridge. Each layer is thoroughly pressed with long thin bamboo strips and tied with homemade ropes. Sometimes, the entire job of fabricating the bamboo frame and packing thatch is done on the ground, and the complete *chhappar* lifted bodily and firmly tied to the roofing under-structure. Normally, the thatching needs replacement every four to five years, the bamboo frame may serve for about twenty years.

The most significant advantage of the thatched roofing is that it is cost-effective. Such roofing is not only most economical, but also timesaving, which even family members can lay without much effort. No costly timber or other material is required for it; it can be fabricated with the locally available fallen and dry jungle wood, twigs and dried grass and bamboo. Obviously, such roofing poses no pressure on the natural resources, and is completely environment-friendly. The old grass and other material can be recycled in many constructive ways. For instance, the old grass can be turned into compost to enrich the soil and, thus help in conserving the environment. Grass is a bad conductor of heat, and therefore repels atmospheric heat and keeps the interiors cool during summer and warm in winters. The only disadvantage is that grass is a highly inflammable.

The Wooden Roofs

Wood has been the oldest roof-covering material in the mid-Himalayan region. In the interiors, there are still many villages with houses covered with wooden planks. A good number of these may be found in lower Kinnaur. For instance, all old houses in Village Kafaur, the first village of Kinnaur District, are covered with wooden planks (Figure 7.6) and so is the Village Lakkar Mandi in Chamba District. However, the people, having realised the impermanent nature of wood under prolonged exposure to the elements, have discovered an imperishable roof-covering material. It is the slate, obtained from



Fig. 7.6: The houses with wooden planks roofing in Village Kafaur in lower Kinnaur

the schist deposits. Possibly, scarcity of wood also might have been another deterrent that required a shift from the traditional roof-covering material.

The traditional woodworkers of this region did not have any idea of fabricating trusses, struts and diagonals to secure lateral rigidity in the fabrication of the roofing substructure. They employed the age-old method of supporting the roof-rafters either on the wooden pillars or posts or on the walls. The same age-old method has continued even today in the residential houses and wooden temples. The roof is projected considerably beyond the supports to protect the wooden exterior of the building from the direct effect of sun and rain.

The gables of the traditional sloping roofs of the houses are not straight, but have one or more angles on it along the horizontal axis. These angles make the lower part of the roof towards the eaves rather flat and the upper portions gradually steeper towards the ridgepole. The number of angles may depend upon the rows of planks or slates that form the profile of the roof. The upper edge of the planks or slates in each row is slightly raised so that the profile of the roof attains gradual steepness upwards, giving the effect of a curvaceous swing to the roof. Apart from giving a pleasing look, this innovation also has a functional advantage. It ensures that the ceiling is provided uniformly at one level, and so the windows can be placed properly and duly protected by the roof projections. Then, the snow deposited on the steep roofs slides down easily with the slightest agitation. Thus, the roofs remain free and safe from the snow deposit even under the severest wintry conditions. However, of late, galvanised iron sheets have been gaining favour with people.

The Slate Roofs

A convenient local substitute for wooden planks has been the slate, for use as a roof-covering material. It has been plentifully available from scores of slate quarries spreading from the interiors of Chamba to the eastern-most corner of Uttarakhand. However, the finest of these are found in the schist deposits on the slopes of Dhauladhar extending from Chamba to Kangra and the upper Beas Valley in Mandi and Kullu districts. In its quality, colour, texture and granular formation, slate differs from quarry to quarry. A slate with deep blue or green colour has fine granular formation and it can be sliced to a very thin sheet of large size. Blue slate can also be polished to a metallic lustre. On the other hand, slate with grey, yellow and brown colours is inferior and cannot be sliced into thin sheets. These are cheaper, but being thicker, are heavier on the roofing substructure. These slates are also prone to faster weathering (Figure 7.7).

A special class of skilled artisans specialises in quarrying, slicing and cutting of slates. The laying of slates on the roof is also a specialised job, which only the traditional artisan can accomplish. For fixing slates, a special type of pointed hammer is required to make holes in it. The slate is fixed on the purlin by driving a nail through the hole in the slate. The slates are laid starting from the gable-end to the ridgepole. Care is taken to provide sufficient lap over the preceding row to cover the hole in the slate. It is also necessary that the slates in the same row overlap so that no gap is left between the slates.

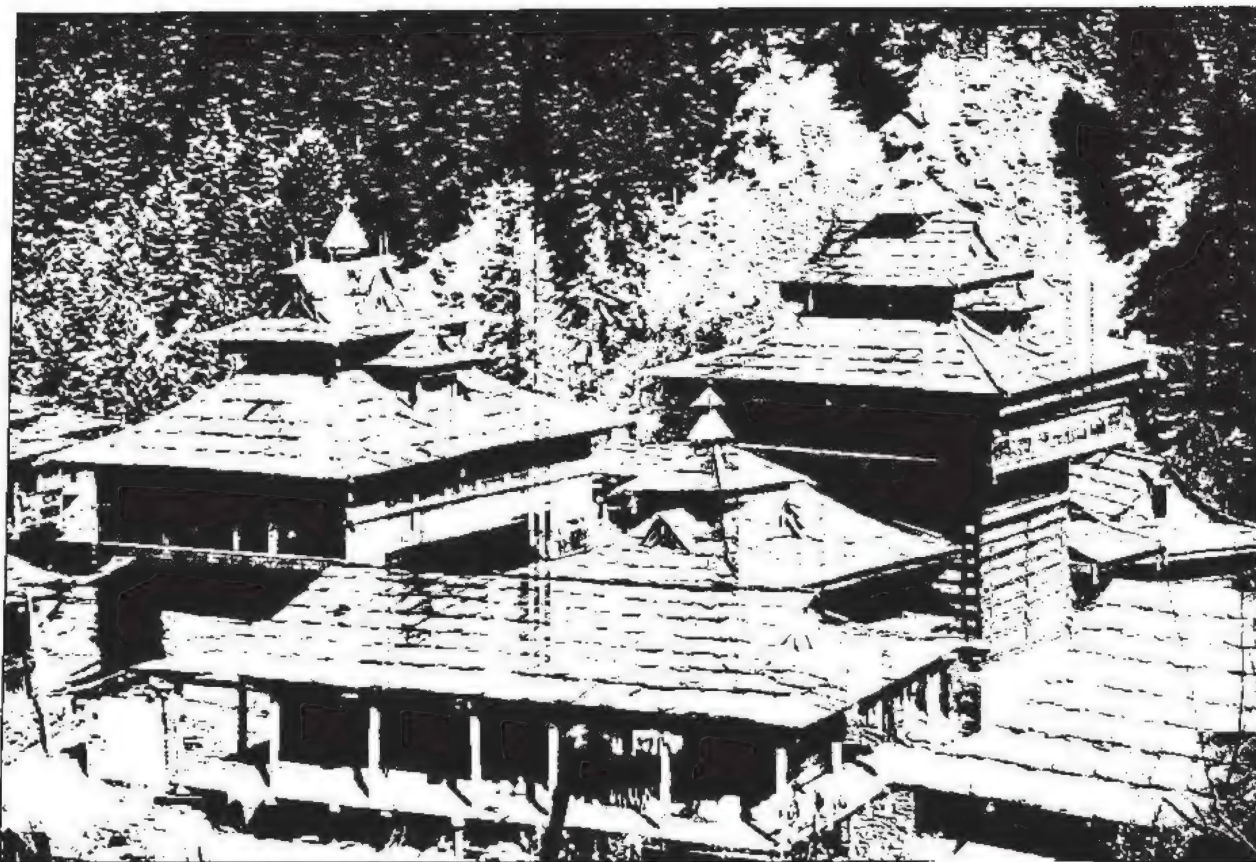


Fig. 7.7: The slate-roofed houses and temple at Village Gawas in the interior of Shimla District

After the wooden planks were replaced by slate, it has become the most popular roof-covering material for all types of buildings in the outer and mid-Himalayan regions. Realising the danger of overexploitation of the forests, even the native gods permitted the use of slate as roofing material over their temples. Thus, slate roofs over many of the old wooden temples in the interiors of this region are to be found. The slates are sliced into thin shingles of different size and shape, and fixed over the planks or even nailed directly over the purlins.

The Mud Roofs

In the highland tract of Doon, a flat mud roof has been common tradition. Such a roof is locally called *chhat*. In this area, sticky red clay is available, which has a very good water-resistant quality. For laying the mud roof, wooden joists (*kari*) are placed about 15 cm to 20 cm apart across the shorter span on the walls. On these, about 1.25 cm thick wooden planks (*mairh*) are laid close to each other. Dry grass or pine needles are spread over the planks, over which a thick layer of clay mixed with binding material

is evenly spread. Finally, the entire roof is given a thick coat of rammed fine clay. A gentle slope to one side is provided to drain out the rainwater.

The *kothas* of the Gujjar of Chamba have *daraba*, that is, flat mud roofs. For laying a *daraba*, long wooden logs (*bandey*) are placed one foot apart over the walls. Over the *bandey*, small and rough wooden planks (*sheelay*) are placed. A layer of local *kakhet* grass or *bhojpatar* (birch-bark sheets), if available, is spread over the *sheelay*. Over that, about 20 cm thick layer of well rammed, compacted mud is laid. An edging of stones is provided on the roof to ensure that the mud from the roof is not washed out during the rains. The roof is projected outwards by about 1.5 m to 2 m over the walls on three sides to safely keep agricultural implements and fodder. On the back side, the roof blends organically with the hill profile. To keep the heavy roof propped up sturdy wooden posts are provided at proper spots in the room.

The people of Pangi and Churah also follow the same method as the Gujjar of Chamba for laying mud roofs on their houses, but the roof-supporting substructures of the Pangwal and Churahi houses are very sturdy. In order to strengthen the roof beams and joists, sturdy posts (*tham*) are provided at suitable spots in the rooms below. The flat mud roofs in the Pangwal and Churahi houses serve many roles. Besides providing cover for the houses, these roofs also serve as a public path, village square, threshing yard, and so on. The joists (*nias* or *nas*) are closely spaced and so are the thick planks (*fat* or *shan*) laid tightly, close together. Over the *fat*, a layer of *kangasi* grass is provided in the Pangi Valley, but in Churah, in place of the *kangasi* grass, a well-beaten layer of pine needles (*chalaroo*) or ferns is laid. Over it, a birch-bark sheet lining is spread. Finally, about a 15 cm thick layer of compact clay is laid and is vigorously rammed. The floating coats of cow dung solution are occasionally applied over the surface to seal the cracks caused by weathering.

In the trans-Himalayan interiors, where wood is a rare commodity, the size of most of the rooms is restricted to a modest size by erecting intermediate walls. However, the size of some multipurpose rooms, in which the families live during summers and winters, cannot be so reduced as to make them inconvenient for living. These rooms have to be large enough to accommodate comfortably the family members around the central cooking-cum-heating place. Such rooms are divided into manageable square or rectangular grids by erecting skinned wooden logs, so that the roofing beams can be spanned on them without any risk. Over the beams, joists are placed, followed by a closely placed layer of thin branches, twigs and brushwood as a substitute for wooden

planks. The entire woodwork is done only with the available poplar or willow wood. For this purpose, people grow their own poplar and willow trees on their lands. Over this layer, a lining of *shakpang*, that is, *bhojpatra* or birch bark is spread. Over the *shakpang* lining, a thick layer of stiff clay is laid. Sometimes, depending upon the availability, a special type of alluvial clay, called *markula* or *tua*, is used for this purpose. This clay is known to possess excellent waterproofing and bonding qualities. In the *Manual of Tibetan Monastic Customs, Art, Building and Celebrations*, Thubten Legshay Gyatsho (1979: 36) has prescribed the method for laying the roof as follows:

When the rafters have been arranged at evenly-spaced intervals, short ceiling planks should then be laid above them, alternating back and forth in herring-bone fashion from rafter to rafter. Atop them a layer of alluvial stone called 'ceiling-plank' is laid, and between them smaller stones are placed. Any remaining gaps are filled up with gravel, and finally the surface is smoothed over with small pebbles. Then, the foregoing surface is completely covered with a layer of thinned mud of good quality, which must be stamped down energetically with the feet. Next, it is covered with a layer of dry earth and again packed down thoroughly.

However, the aforementioned method may be more relevant to monasteries than to the residential houses of the lay folks, who rely more on inherited folk wisdom. It is essential that the flat mud roof is cleared of the snow deposited on them at the first available opportunity, lest the melted snow seeps through the roof and the icy water starts trickling down. It is also possible that under the heavy dead weight of metres of snow deposited over the roof, it may collapse, spelling doom for the household. Therefore, to avoid such mishaps, people shovel away the snow with the wooden shovel-like implements (*woll*) immediately after it snows.

FINISHING

The simple village folk of the Himalayan region have a very keen and subtle sense of beauty. This faculty is reflected spontaneously and naturally in the finishing work of their houses. While most of the work is done by men, the finishing work has traditionally been the responsibility of women. They do the job meticulously and with great pleasure. The raw material – cow dung, clay, earthen colours, and so on – for the finishing work is all plentifully available in the vicinity.

The basic material for the finishing is clay, from which mortar is prepared. To prepare a good mortar (*gara*), local clay is procured, cleaned, properly pulverised and sieved. Generally, red ochre is preferred for preparing an all-purpose mortar. This clay is stiff and water-resistant. For this particular type of clay, there is a popular saying, '*sukki ta loba, gili ta goha*', that is, 'if dry, it is as hard as iron, but if wet, as slushy as cow dung'. It is then soaked in water and well-kneaded using one's feet. It is then made into a heap with a depression in the middle, in which water is filled. The heap is left so for some days, but care is taken to fill water in the depression. After that, cow dung and chopped pine needles (*chalaroo*) are mixed and the whole mixture is again kneaded with the feet. After that, again the *gara* is formed into a heap, with a depression filled with water in the middle. It is again allowed to mature and thoroughly blended for some days to make the *gara* (mud mortar). During the summers, the process of maturing is fast, but it is slow in winters. The *gara* is then ready for use. It can be used as mortar for masonry work, for laying the mud roof, but mostly for plastering the houses.

After the structural work for the house is complete, it is time for plastering, that is, applying *maidagi* (plaster). To prepare the surface for plastering, *gara* is applied tightly to fill in all the depressions, gaps and holes in the walls so that the surface becomes even. It is then finished by hand to form a smooth surface. The womenfolk of Jammu-Kangra area are experts in plastering work. They not only ensure a satin-smooth surface, but also execute interesting relief decorations on the plastered surface. The peacock is one of the most favourite motifs in such a wall decoration (Figure 7.8). After plastering, the entire outer surface is treated with a fine coat of smoke-greyish clay. This clay is locally available in the area. The interior is either whitewashed or treated with a smoky-greyish coat.

In most of the places in the region white earth, locally called *golu* or *makol*, is used for whitewashing exteriors and interiors of the buildings. The colour washing is done up to a height of about 70 cm from the ground level. A strip of *losti* is also provided

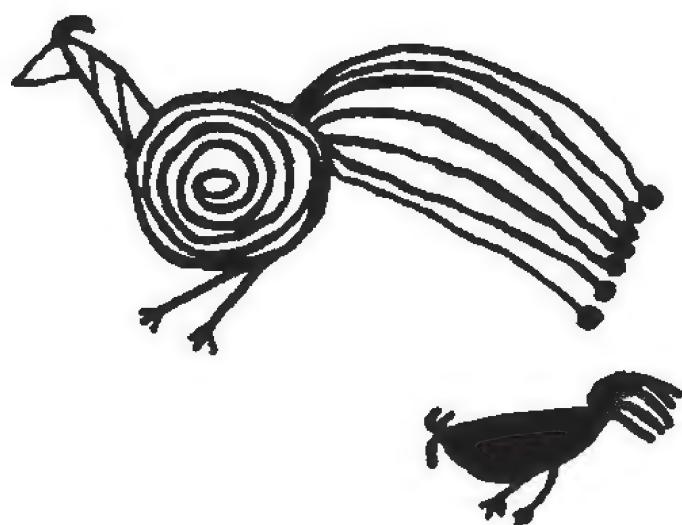


Fig. 7.8: The peacock, the most popular motif for wall decoration

all around on the outer face under the gable, but the rest of the outer surfaces of the walls are whitewashed. At times, splashes of coloured earth (*losti*) are marked on the whitewashed exterior to make it look colourful. This type of splash decoration is known as *chbitta*. The houses are whitewashed occasionally with white earth. To prepare the *makol* solution for whitewashing, it is dissolved in water and strained to separate the insoluble residue. Then some quantity of salt and gum or rice starch is added to the solution. It is then ready for use. The same process is repeated for preparing the *losti* solution (Figures 7.9 and 7.10).

At many places in the Jammu-Kangra region, where the house is built with the hammer dressed or chiselled stone masonry, instead of mud plastering, people prefer pointing, especially the raised and cut type, in cement mortar so that the stone may remain exposed to announce the status of the owner. On the pointing, *makol* or *losti* is applied to make the pointing stand out.

In fact, decorating houses with various figures and devices has been regarded as an auspicious omen for the household (Figures 7.9 and 7.10). The door and window openings are particularly lined with *losti*. Even the fronting courtyard is profusely decorated with earthen colours to produce various curvilinear devices, locally known as *likhnoo* or *dehar*. Such decorations, done with the manipulation of fingers on the cow dung smeared floor, are known as the *hangaiyan* (Figure 7.11).

In the mid-Himalayan region, the exposed woodwork – the doors, windows, ceiling, and so on, are painted with the traditional painting medium, *geru*. To prepare that 'paint', ruddle or *geru* is dissolved in water. The solution is then applied to the exposed woodwork and allowed to dry. When properly dried, a wash of mustard oil is applied to it, which makes the paint water-resistant and long-lasting. It is believed that the ochre and mustard oil coating protects the woodwork from worms. At some places, the exposed woodwork, including the exposed wooden floors, are rubbed vigorously and repeatedly with cow dung and washed with the cow urine. Thus, not only does the surface become smooth, but a rich ivory-like texture also appears on the woodwork. This treatment also works as a disinfectant. The people of this area are very fond of their houses. They maintain them with loving care. Thus, a house built decades ago looks as fresh as if recently made. For such meticulous maintenance of their houses, the womenfolk of the area deserve all the credit.

In this region, white earth is not locally available at many places. Where available, people prefer whitewashing and colour washing the walls of their houses. However,

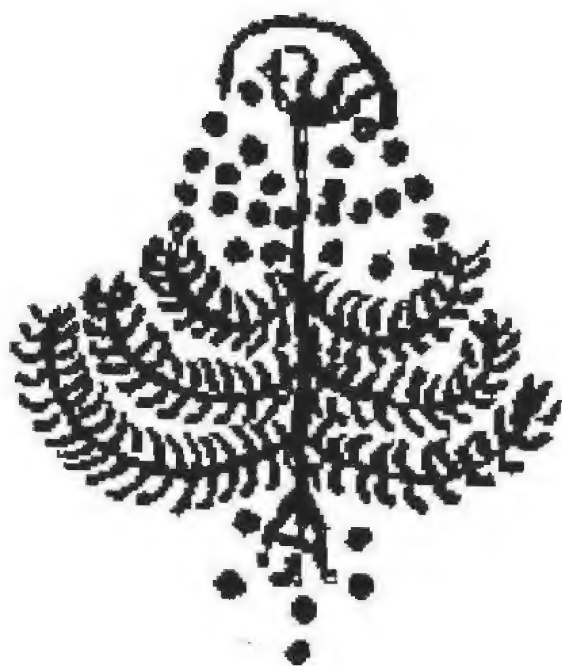


Fig. 7.9: An auspicious design used for floor decoration

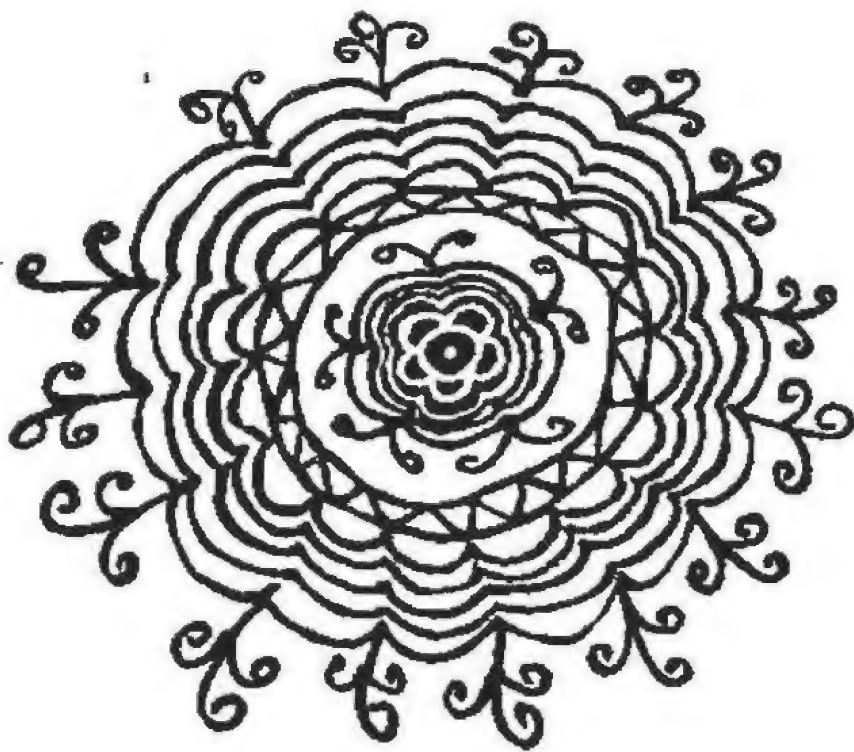


Fig. 7.10: An auspicious decorative motif



Fig. 7.11: The Hangaiyan – designs made by hand on a cow dung smeared floor

where white and coloured soils are not easily available, plastered walls are treated with floating coats of cow dung solution.

The Gujjar of Chamba are not greatly bothered about finishing their *kotba*. After the structural work is done, it is plastered with a special type of all-purpose sticky local clay, known as *gunret*. This brown clay is reasonably water-resistant. When it is dry, a flowing coat of *gunret* is applied all over again. They use this clay even on the doors and other wooden parts. Mud coating of walls and interiors is occasionally repeated. The Gaddi of Chamba use the local grey-coloured sticky clay, called *chik* to plaster the walls of their houses. This clay can only be applied in a very thin layer, sometimes, even a wash of the *chik* solution is considered sufficient. If applied thick, the clay cracks and flakes off.

In the trans-Himalayan region, local clay is used for preparing mortar, though this mica-laden, sandy, grey clay has very poor adhesive quality. When moist, it is sticky, but once dry, it simply turns into powdery dust. For that reason, it is not good even for plastering. Since pine needles are not available in this area, people use chopped barley chaff as the binding material to prepare mortar. No dung is added to the mortar, for it is a precious fuel for the people. However, the alluvial clay is mixed with the local

clay to increase its adhesive power. At some places, very sticky and water-resistant alluvial clay, known as *markula* or *tua*, is also available. It is also added to the local clay to increase the binding strength of the mortar.

The method of preparing mortar is similar to the one explained above. The poor adhesive quality of the mica-laden grey clay of the trans-Himalayan region notwithstanding, when properly prepared with adequate portions of binding material, becomes a good water-resistant plastering medium. Further, the mica contents in this clay render a very rich glossy finish to the plastered surface.

Before plastering, all the gaps and depressions are filled up with mortar to make a smooth surface, and before the filling dries, a thin layer of plaster is applied by hand. When the plaster is still wet, a thin, watery finishing coat is applied by hand. Thus, a very smooth and slippery surface is produced. In some residential houses of this region, murals are executed on the internal walls of some rooms, especially in the *chos-khang*. For such murals, the wall surface needs a special treatment. To prepare such a surface, slaked lime is strained several times and the lime water solution is left undisturbed for a few days in a container so that the lime sediments settle down at the bottom. Later, the water is removed and the fine lime paste is obtained which is mixed with a double quantity of pure and clean sand. That mixture is made into a fine paste. The paste is applied on the surface with a wooden trawl to a thickness of about 2 mm to 3 mm. The surface is then rubbed vigorously with a smooth river-borne or agate pebble shell. Further, about one-eightieth or one-hundredth part of butter or yoghurt is thoroughly mixed with fine and well-strained slaked lime that has remained soaked for sometime. That paste is applied on the prepared surface in very thin layers, many times and each time, the surface is vigorously burnished until the surface is ready for mural painting.

In this region, especially in Lahul, Spiti, Ladakh and Zaskar areas, the outer upper surface of the walls is daubed with grey-coloured clay, possibly to break the monotony. Broad, irregular bands of red and chrome colours are painted just under the line of the roof and around the window openings. At many places, the openings of the symmetrically arranged windows are rimmed by black strips. Against the wall, plastered with light-grey clay or whitewashed, these strips impart the effect of a soaring fortress to an otherwise small building.

From the foregoing discussion, it becomes amply clear that the people of this region, as elsewhere, relied entirely on the locally available natural resources for meeting the

requirement of construction materials for their houses. From the humble mud and dung to grass, wild logs and timber, stone, slate and natural pigments, people have been making the best possible use of all that bounteous nature has granted them. They have used these materials not only to construct their houses, but also to embellish them in a most unassuming and subtle manner. In the areas, where wood has been the staple construction material, the art of woodcarving is so highly developed that it has been regarded among the finest in the world. And, in other parts, where mud and stone have been the common construction materials, the folk wall decoration, done by the womenfolk on various occasions, and the classical wall paintings, in the old temples, monasteries and palaces have attracted the notice of art historians, art lovers and connoisseurs. That by itself is an independent study.

CONCLUSIONS

THE JOURNEY HAS BEEN VERY TIRING AND ARDUOUS, YET SATISFYING AND NOSTALGIC. The author has been to most of these areas – the remote and isolated villages mentioned in the book, time and again, in different seasons. Visiting them once again was virtually reliving the past. However, this time the objective was entirely different – not exploring the temples and monasteries or the deserted sites for possible evidence of archaeological importance, but for something different – to investigate surviving relics of the folk wisdom preserved in the secular and domestic architecture of the common people. The topic initially appeared commonplace and uninspiring, but the deeper the author delved, the more overwhelming were the subtleties of the folk wisdom in planning, designing and building of their homes. Therefore, he felt tempted to dig out the details and look for the reasons and circumstances responsible for this aspect of the folk ingenuity and creativity.

The houses of common folks, built with the locally available material – grass, earth, cow dung, reed, bamboo, stone, brushwood roots, clays, *golu*, *losti*, and so on – came up organically from the ground itself. The timber has also customarily been available to the rural folks at the nominal right-holders' rates from the specified, nearby forests. Thus being built from the locally available material, these houses are firmly 'rooted' to the earth and organically form an integral part of the landscape. These houses, being free from any material hazardous to the environment, are not only absolutely eco-friendly, but also enliven the environment by constructive human activities. It may be a thatched

hut or a traditional single storeyed house, built amidst the fruit bearing trees or plantain groves, the flat stretches of Kyarda Doon, or a house abutting the hill-slope of the Doon highland: all these houses blend harmoniously with their local environs. Similarly, the double storeyed houses of the Jammu and Kangra region pleasantly merge with the surrounding foliage.

It may be significant to note that the local availability of construction material has considerably influenced the architectural parameters of the house. In the outer region, where stone is locally available, the houses have flat and plain elevations, with minimum architectural or structural embellishment, possibly under the economic constraints with regard to carving and decorating stone. However, the womenfolk fully compensate for that inadequacy. As a matter of routine, they often wash and paint the walls and floors of their houses with white and coloured earth and cow dung. On the other hand, in the wood-based architecture of the mid-Himalayan region, the exposed wooden structural elements are profusely carved in various ways, giving the wooden houses a beautiful appearance. Therefore, no superficial decoration is carried out in that area.

In the middle part of this region, where the topography is mountainous, the multi-storeyed wooden houses, set among the mighty deodar trees, are so built on the terraced slopes along the contours, that they not only blend with the mountainous landscape, but also add an element of variety and activity to it, making the environment more scenic and lively. The innovative technique of combining stone and wood together into the composite walls – *katth-kuni* and *dhhol-maide* – in the terrains where good stone for structural purposes is a rarity, has not only lent stability and structural solidity to the multi-storeyed residential houses, but also made them stronger against all types of stresses and strains. Significantly, while the ancient stone-built *Vajreshvari* Temple (Bhawan) at Kangra, the massive Kangra Fort and many other stone-built old and modern structures in this region, fell victim to the two massive earthquakes – the Kangra Earthquake of 4 April 1905 and the Sumdoh Earthquake of 19 January 1975 – the timber-bonded residential houses survived. The timber-bonded towering castles at Chaini and the structures in the interiors of Satluj Valley suffered only partial damages due to the devastating tremors. There is a need to explore the possibility of adopting such traditional techniques in modern building construction by finding a suitable substitute for wood.

In the rugged trans-Himalayan snow-desert, where man can survive only through his grit, courage and perseverance, the houses are all built of mud from the bottom to top. These box-type houses have flat mud roofs, with no other covering material to use. Despite the fact that the snow piles in heaps on the roofs, people cannot but

have flat house roofs as a mud roof cannot be tilted into a slope. Therefore, the people in that inclement climate have to clear snow from the roofs of their houses repeatedly during the freezing winters. Despite the marrow-chilling blizzards and masses of snow outside, the interiors of these houses are comfortable and cosy. The dimly lighted interiors, with minimum openings and enclosed by the thick rammed earth walls create a microenvironment of its own. The proximity to the livestock tethered in the nearby enclosures also contributes to the living comfort. With thick rammed earth walls and minimum openings, these houses blend so well with the stark surroundings that from a distance one can hardly distinguish between them, but for the shadows that these cast on the ground. Similarly, in one of the harshest living conditions, that of Zaskar, the people have evolved a simple but ingenious way of making their houses warmer. There, the winter living area on the ground floor is partly sunk underground and partly buried into the mountain slope. That not only insulates the interiors from the outside freezing chill but also partakes of the underground warmth.

Thus, these houses, the temples and monasteries of the people, built in different environmental settings blend harmoniously with the surroundings, forming an integral part of the environment around. It may be difficult to find a traditional house in the entire Himalayan region that will appear out of place in the overall natural setting. In contrast, the modern synthetic high-rise structures appear to be flagrant intrusions in the serene Himalayan landscape.

How the common 'mountain' people of this region could evolve such nature-friendly, comfortable dwellings under diverse geoclimatic conditions may not be difficult to understand, should one try to put oneself in their place. These people, living intimately with nature through time immemorial, have developed an innate sense of feeling that the best way to live, and live in physical and mental composure, is to live in harmony with nature. The people of this region love the salubrious environs of these mountains – the soothing air and the cool and clean waters – from their heart. They feel emotionally attached to the Himalayan ambience as the following Gaddi folksong aptly conveys:

Odane jo patu, bachhayane jo sele,

na chode phatade na hunde maile.

Chheluan-bheduan jo leyi kithi chaleyā Gadiya?

Thanda pabad chhadi tethi, suka changar meleya.

Thandi thandi hava, thandada je pani, O!

Banka pabada ra basana, O Jinde!

*Sare mulakh handi-pehri dekhi laye,
Kya es dilara dasana, O Jinde?*

Translated, this song means:

Blankets to swathe, goat-hair mat to lie,
Tough and dirt-proof, as are these well nigh.
Where do you go! O Gaddi, with your herd on the sly?
Leaving cool mountains for the land, waste and dry.
Cool and soothing are the air and water,
Lovely is the life of mountains and dell.
Having now wandered the world over,
What remains in my heart, for you to tell?

All the traditional wooden temples and monasteries of this region have largely been the creations of voluntary community participation, but that community involvement is not confined to the religious edifices only. Even the houses of common people are built by pooling workforce under the age-old tradition of reciprocal community participation. That institution exists everywhere in the Himalayan interiors, known by different names. Thus, among the Gaddi of Chamba, it is known as the *kewar* or *saret*. The Pangwal of Chamba call it *dar*. In the Mandi-Kullu area, it is known as the *juwari*. In the interiors of Sirmaur and Shimla districts of Himachal Pradesh and Jaunsar-Bawar area of the Dehradun District in Uttarakhand, the system is known variously as the *haila lagana*, *tthela*, *daruch* or *buara*, and so on. Under this system, days are mutually arranged for one male person from each household in the village to voluntarily contribute his labour towards this cooperative effort. When a skilled artisan is engaged for the specialised work, especially for woodwork, he is customarily compensated in cash and in kind.

Not only the people join in the construction of a house, but also the village deity is involved at all stages. The owner does not forget to seek its blessings and protection at each stage. In fact, from the ceremony of laying the foundation stone until the finishing work, constructional and ritualistic activities go together. The protection of the village deity is especially solicited when laying the foundation stone, completion of plinth work, placing of the main door on each floor, the laying of the floor and roof beams, ridgepole, covering roof, and so on. However, a gala celebration is held on the housewarming day, known variously as the *nayaz*, *pathraitna*, *badhaie manana*, *gaurasing*,

gharsing, *poriashma*, and so on. On that occasion, several goats are sacrificed to the village deity at many places in the interior regions.

With the construction material and most of the labour locally available because of the customary reciprocal community participation, the owner and his family have only to invest little money and effort to construct a house in the traditional style. At times, the institution of the village deity or even the community takes care of the money part also when the owner cannot afford it. Of course, he repays in kind, sometimes by doing work for the deity or performing community service. That is why even the poorest of the poor in the Himalayan interiors possesses a house howsoever humble they may be, as against the painful fact, that many people are obliged to spend their whole lives on the pavements elsewhere in the mainland.

The domestic architecture of this region is not only economical, eco-friendly, and conducive to the body and soul, but it is also very functional. Most of the traditional houses, though laid out in a rectangular formation, tend to be quadratic. Thus, under the given site-conditions, an attempt is always made to conform to the square layout, mostly in the middle and the trans-Himalayan interiors, for the people intuitively understand that the square layout is the most economical, as lesser length of walls is required for the same area of a square layout than in the rectangular one.

The tendency for the quadratic layout notwithstanding, the people are instinctively conscious of the fact that a square room feels stuffy and closed against the rectangular one, which exudes a feeling of space and airiness. Consequently, despite the overall quadratic layout of the house the rooms are usually rectangular or oblong in shape. Thus, the rooms in most of the traditional peasant houses, though small in size and deficient in certain aspects according to modern standards of lighting and ventilation, are by any other standards far more comfortable, cosy and homely than the modern air-conditioned and well-appointed rooms in the towering urban houses. However, under the subtropical climatic conditions of the foothills, the houses are generally built in linear formation in a single file to ensure unobstructed flow of air that may keep the interiors cool. In that region, people prefer living in the cooler ground floor during the summer.

Equally interesting and revealing may be the provision of *pand* (entresol or mezzanine) in most of the traditional houses in the mid-Himalayan region. The existence of a hidden floor in the traditional houses is a very typical and strategic structural provision of the Khasha architecture. The importance of *pand* becomes clear in the background of the warfare in mediaeval times among the feuding *khoond* factions.

Having gained experience and expertise of utilising the locally available materials – earth, stone, slate, thatch, twigs, leaves, wood – under varied geoclimatic conditions, the common people of this region have evolved definitive knowledge systems for laying out and orienting their houses to the best advantage of their living style. The traditional knowledge system continued to be transmitted orally from one generation to the other for many centuries until it came to be preserved in the scriptural form. Many of the formulae of layout and orientation were also explained by the *mandal* diagrams. That compendium of the traditional knowledge system came to be known as the *Sancha-vidya*. Only a few of the accomplished Khasha-Brahmin and hereditary *thawin* can interpret these texts. The *Sancha-vidya* texts are preserved as closely guarded secrets, for it is feared that misinterpretation of the texts can be very harmful. The text of *Sancha-vidya* can only be efficacious when it is coupled with certain rituals. Thus, the role of *chela* (a sorcerer) normally becomes necessary at the time of laying out a house. Among the Gaddi of Chamba, the text of *Sancha-vidya* is known as the *Bastu Sarani*, and in the parts of Sirmaur and Solan districts, as the *griha-kundali*. This compendium of the empirical knowledge-system of the common people, sanctified by the tradition and distilled through experience, forms the bedrock of the *Vastusbastra*.

The traditional residential houses are swept daily and smeared with the cow dung solution in a routine manner. Thus, at all times, the houses are reasonably neat and tidy for all practical purposes and this is good from even the hygienic point of view. However, there may be a need for introducing some practical ideas about hygiene in some areas, but the much-hyped notions of the clinical cleanliness may not be desirable. Instead of doing any good, these may not only induce environmental hazards, but may also grievously impair the disease-resistant immunity system of the village folks, who have to work in very adverse and different conditions. The biodegradable impurities are better than the slow-poisons in the synthetic hygienic products. However, there is a need for independent bathrooms and toilets with reasonable water supply and suitable disposal-cum-recycling system that suits local conditions. If the people are encouraged to introduce snow and rainwater harvesting to meet their domestic needs, it shall go a long way in improving the lifestyle of the people. With these minor improvements in the traditional domestic architecture, the houses of this region can be so wholesome and comfortable that not only the mortals, but even the gods shall feel tempted to live in them.

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APPENDIX

TRADITIONAL METHODS OF PRESERVING FOOD GRAINS AND OTHER STORES

UNDER THE PREVAILING GEO-CLIMATIC CONDITIONS, AGRICULTURE ON THE RUGGED and steep-terraced fields of the Himalayan region has essentially been rain-fed. People grew only coarse varieties of grains to meet their food requirements. Among the coarse millets, *koda*, *ogla*, *fafara*, *chalai*, maize, and barley, and so on, were the main crops. These crops were grown at different places depending upon the local geo-climatic conditions. People also cultivated local varieties of wheat and paddy where local conditions permitted. Coarse varieties of pulses, like *kulath*, local varieties of kidney beans, lentils, and so on, were also cultivated.

As money was scarce, the people were normally obliged to pay revenue in kind by depositing a stipulated part of the produce in the state warehouses after each harvest. Besides the grains, honey, ghee, opium, and so on, were also collected as revenue. Interestingly, opium was the most preferred item of revenue collection in most of the princely states.

For stocking the grains so collected, the hill rulers and landlords had constructed large storehouses, called *kothi*, *kathar*, and *kathyar*, and so on, at different places. Since these were also used as *dak-bungalows* or rest houses for the visiting local authorities, a good stock of woollen blankets was also kept. The official responsible for the watch and ward of these storehouses was known as *rakha*.

Similarly, as a legacy of the antiquated village-level theocratic institution, people used to pay tribute in kind to their village deities after each harvest. Thus, the village

gods in the interiors also used to maintain huge stocks of grains in their castle-like towering *bhandars*, built in the heart of villages. While on the topmost floor of such *bhandars*, the trumpery *moharas* (face-images) of the deity were enshrined, the lower floors were used for storing grains, utensils and other valuables of the deity and the village community.

Thus, in the *kathyar* and *bhandar*, huge quantities of food grains and other commodities always remained stocked. In case of emergencies caused by drought or other natural calamities, or to meet various social obligations, food grains were released from the buffer stock to be replenished in the next harvest. Grains and other commodities were loaned to individuals to meet their requirements and recovered from subsequent harvests. To ensure that the stocks in the state storehouses and *bhandar* remained well preserved and safe from the effects of weather and attacks of worms, insects, termites, and so on, the people had evolved reliable methods of preserving foodstuffs, woollens, and so on, for long periods.

The coarse grains like *koda*, *ogla*, *fafara*, *chalai*, though not very palatable, are known for their excellent storage life. These varieties can stay well preserved and insect-free in the natural form even in humid conditions without any treatment. These grains are stored in the boxes made of non-resinous wood, such as the horse chestnut, wild mulberry, *shur*, birch, wild apricot, and so on. In Uttarakhand, wood species like *sanad* and *getthi* are known to be used, for this purpose. However, the *pedu* (silos) made of the woven bamboo strips, coated with the cow dung solution, have been the best wares for storing these food grains. These *pedu* have to be kept on raised pedestals with sufficient open space around to protect them from rats. In the interior regions, *khaltu* or *kelva* (goatskin bags) have also been used for storage.

Occasional exposure to the sun is all that is required to preserve these coarse varieties of millet. About *koda*, it is said, that if kept in a *pedu*, it can stay fresh for decades, if not centuries. There are several confirmed instances of stockpiling breads of *koda* flour in the *kathyar* and *bhandar* for being supplied to the people engaged in the community service or to fighting troops during the pre-modern feudal times in the Himalayan interiors. I can testify to this quality of *koda* bread based on my own experience. I had to live on *koda* bread stuffed with the opium seeds and *gur* (sugarcane jaggery) in one of my wanderings in the Himalayan interiors, while trekking around Malana, in the interiors of Kullu. A popular aphorism about *koda* says, '*Koda sabhi anaja ra raja, jebe seko tebbe taja.*' That is, '*Koda* is the king of all grains, when warmed up it's fresh again.'

Wheat and paddy were grown only in the valley areas and the sub-Himalayan tract, where a congenial climate for cultivating these crops existed and irrigation facility could be improvised. However, none of these cereals could be the staple food of the agrarian folks. They mostly subsisted on coarse varieties – maize and barley. One of the traditional methods of preserving and protecting wheat was to treat it with the *dhao* – a natural form of iron oxide obtained from the leaching of oxidised iron-bearing strata on the banks of streams and rivers. Incidentally, the local term *dbaogari* for the iron-washer community is derived from *dhao*, which also means the iron ore. People used to collect the viscid *dhao* from the exposed deposits and dry it in the sun. After it was powdered, it was mixed with wheat. Thus, the wheat could stay safe from pests for some years. It was necessary to wash this wheat properly and dry it in the sun before it was ground into flour in the *gharat* (traditional watermill for grinding).

However, the most popular method of preserving wheat, paddy, maize and barley was to mix the well-strained charcoal ash with these grains and store them in the sun-dried non-resinous wooden boxes or the *pedu*. Incidentally, the most effective traditional way of keeping *galgal* (citrons) fresh for longer periods has been to keep it well-covered under charcoal ash. In fact, charcoal ash has been a very effective preservative for various types of grains and vegetables. In the interiors of Shimla District, leaves of walnut are used to protect wheat from pests and worms.

Honey stays naturally fresh in the earthenware, but it becomes thick and dense with the passage of time and through the years, assumes a sticky and powdery form. Old honey is valued highly for its numerous therapeutic qualities.

Ghee turns muddy-yellow, bitter and unfit for human consumption with the passage of time. However, the older the *ghee*, the higher therapeutic value it has. It is considered highly efficacious as a cure for rheumatic pains, bone fractures and many other ailments. According to one custom among the Khashas, the parents of the bride used to present her with a particular type of earthen pot filled with *ghee* as a part of her dowry. On her first delivery, she was required to drink that *ghee*. It was believed that the *ghee* protected her from exposure to the cold. Sometime it happened that the couple remained issueless and thus the *ghee* remained unconsumed for many decades. In the interiors of Chamba, Lahul and Mandi districts, woodenwares made of walnut wood were also used to store *ghee*.

Opium stays well preserved for many decades without any treatment. However, it loses its toxicity with the passage of time. This process of degeneration is faster if it is stored in humid conditions.

The pulses, *kulath*, local varieties of kidney beans and lentils were preserved by coating them with mustard oil. However, pulses do not stay well preserved for longer periods.

The most effective way of preserving woollen blankets in the *kathyar* and *bhandar* has been to store them in the deodar wood boxes. The boxes made of deodar wood are considered best for storing woollens, for the odour of deodar oil acts as a repellent for moths and insects. However, these boxes are not suitable for storing foodstuffs because the odour of deodar wood oil may make food items unfit for consumption.

The thick and dark-coloured oil extracted from the stumps and roots of deodar wood by the destructive distillation also has several therapeutic qualities. People have been using it traditionally for treating ulcers and eruptions, and for curing mange in horses and sore feet in cattle. This oil has also been used for applying on the inflated skins, called *daraian* (made of the buffalo-skin) and *sanai* or *sarnahi* (made of the sheepskin) that were used for crossing rivers. The *ghaloos* – the professional floaters of timber in the rivers and streams – have been using these inflated skins to work in the flowing waters. This oil not only keeps the skins soft, but it also serves as an effective repellent against insects and moisture. Deodar oil is also used as an effective wood preservative against termites and other insects. People in the interiors have been applying deodar wood oil on the exposed wooden structural members of their temples and houses.

Among the other traditional methods of preserving the woollens, is the practise of keeping *losar* grass in the folds of woollen blankets and other clothing. This has been common among the people of Kullu District. This aromatic grass not only keeps the woollens pleasantly fragrant but its aroma also acts as a repellent. This grass grows on the Chandrakhani Range on way to Malana.

In Kinnaur and interior regions of Shimla District, the dried petals of *brahmkamal*, which grows on the alpine heights, are kept in the folds of woollens to keep them protected from insects. This flower is known as *dondro* and *raongad* or *rogal* in Kinnaur and *nesar* in the interiors of Shimla District. People regard the *brahmkamal* as a sacred flower, and it is customarily gathered during the Fulech Fair or around the fifteenth of *Bahdon* lunation (corresponding to the end of August) only. Another variety of *brahmkamal* is the *gyalchi* flower. Its petals are also used for preserving woollens in the parts of Kinnaur District.

In the lower Himalayan region, *neem* leaves have traditionally been used for preserving the woollens.

Although rare, goats and sheep were accepted as revenue in some of the interior principalities, but offering of goats and sheep to the village deity has been a usual practice in the interiors. These animals were sold, bartered or slaughtered for mutton during celebrations and fairs. The mutton was never accepted nor stored in the *kathyar* and *bhandar*, but people have devised a very effective method of storing meat not only for months but also for years in the interiors and the trans-Himalayan region. During the winters, the people in those cold regions slaughter a good number of goats, sheep and yaks for meat. It is cut into long strips and suspended from ropes over the traditional hearth so that it gets smoked and dehydrated. When properly smoked and dried, those strips are cut into pieces and stored. When needed, the pieces are rinsed in water and cooked. During one of my treks from Spiti to Ladakh, I had to subsist entirely on such dried yak meat for days.

All said and done, occasional exposure of the food grains, pulses and woollens to the sun has been the most effective natural way of preserving them. The other additives only further prolong their storage life.

GLOSSARY OF LOCAL TERMS

abadi. A settlement/ habitation.

ado. A niche.

aghal. An improvised barn.

agney-kon. The southwestern angle.

angan. An open courtyard.

angul. The width of a finger.

aour. A room on the ground floor.

atali. A window.

bada. A wooden joist or beam.

badai. A large wooden storage boxes.

baddhi. A local carpenter.

badhaie manana. The housewarming feast.

bad-tabari. The large household.

bagar. A kind of thatching grass.

baih. The flooring beam.

baithak. The living room.

bal. A rafter.

balla. A round wooden log.

ballee. The same as *balla*.

bandey. The roofing wooden beam of a *kotha*.

bandor. The ridgepole of the wooden temple roof.

baranda. The same as the *bandor*.

bartandar. The customary concessional rates of timber for the right-holder.

basrang. The cow dung cakes.

Bastu Sarani. The local *Vastu-Shastra* or the treatise for building construction.

baud. The third storey of a building.

bawad. The living floor above the *pand*.

beeh. The fronting veranda.

begar. The drafted menial labour.

behi. The projected fronting veranda.

bhabhar. The same as *bagar*.

bhaiday. A recess in the wall.

bhandar. The towering wooden temple-structures amidst a village.

bharti. The hand-filling of a foundation.

Bhatori. The Bhot (Buddhist) village in Pangi Valley of Chamba.

bheen. The outer edge of veranda on ground floor.

bheend. The same as *bheen*.

bheet. Stone masonry wall of a building.

bhitt. The wooden or stone masonry wall of a building.

bhittwali chinai. A rammed earthen wall in Jammu-Kangra area.

bhojpatar. The birch-bark (*Betula utilis*) sheets.

bhojpatra. The same as *bhojpatar*.

bhoomi-pooja. The worship at the site of proposed building.

bhor. The second floor.

bichoo. A traditional latching apparatus for door.

bihad. A small storage space.

binag. The wooden railing.

biyoond. Rooms on the ground floor.

bizurath. A large room of a house in upper Kinnaur.

boad. The living floor above the entresol or mezzanine.

bong. The ground in a multistorey Kinnauri house.

bonti. A movable slate on the roof.

bramdah. A veranda.

brani. A flooring beam.

bTsun-gral. The Buddhist monastic injunction requiring the eldest son in the family to become monk.

buara. The customary reciprocal community participation.

- bukhari*. The first floor of a Pangwal house.
- burche*. A local variety of bush used for roof-covering in upper Kinnaur.
- byar-sa*. Large summer sleeping room in a Spitian house.
- chadray-di-chhat*. The corrugated galvanized iron (CGI) sheet roofing.
- chagra*. The trans-Himalayan dry toilet.
- chakhandee*. A fronting oblong enclosed veranda.
- chakh-thab*. A rear winter living room of the trans-Himalayan house.
- chakka*. A slate, usually used for roofing.
- chala*. A sink.
- chalai*. A variety of coarse grain.
- chalaroo*. Pine needles.
- chamush*. A local wild species of aromatic plant.
- chanai kandh*. A type of timber-bonded wall, in which wooden binders are placed between two or more courses of stone.
- chanbara*. The spacious central room of the Jaunsari house.
- chanpa*. A notched ladder of a Ladakhi house.
- chanura*. A stone slab to cover *dusrang* in the lower Kinnaur.
- chaukhat*. Window frames.
- chela*. An oracle (sorcerer) of the local deity.
- chensa*. A guest room in Spitian and Ladakhi houses.
- cheol*. The framework of wooden joists and struts used as a wall plate.
- chhaba*. A flat basket.
- chhai*. A small opening in the wall of a Churahi house for light and air.
- chhai kutheri phul*. An ornamental *chhai*.
- chhak cha*. The same as *chagra*.
- chhan*. A large fenced penning enclosure.
- chhanan*. The thatched roof.
- chhand*. The attic floor.
- chhandwalie*. A ventilator.
- chhang*. The local wine.
- chhanni*. A large framed sieve used for straining.
- chhappar*. The gabled roof.
- chhappraur*. The projection of a *chhappar* beyond the wall.
- chhapprauti*. The same as the *chhappraur*.

chhara. The same as *chagra*.

chat. The flat mud roof in the highland tract of Doon.

chhindwasli. A small opening on the roof for smoke to escape.

chhinga. A wide passage on the first floor in a Lauhli house.

chhitta. The splashes of earthen colours on the wall.

chhoti. The wooden roofing rafter.

chik. Grey-coloured sticky clay.

chobu. A trapdoor.

choh. Covered projected veranda in front of *chanbara*.

chokhat. Doorframe.

chorten. A stupa.

chos-khang. A prayer room in the Bodh (Buddhist) house.

chos-khor. A large monastic complex, especially for spiritual study.

chowki. A house with a quadratic layout; also, a central post.

chul. A curse of the displeased *ore* or *baddhi*.

chulhada. A hearth or a cooking range.

chuli. *Prunus Armeniace*, its oil is used for polishing woodwork.

chullha. The same as a *chulhada*.

chzalairi. The same as *cheol*.

dak-po. The owner of ancestral property in the trans-Himalayan region.

dalan. The inner running veranda in a *chowki*.

dali. A particular species of wood of Mandi-Kullu area used for making wooden fringes and bells.

dar. The same as *buara*, a door, also a common name for timber.

dar lagana. The placing of *nias*, that is, a wooden wall plate, on the walls.

daraba. A flat mud roof of the *kotha* of a Gujjar.

darak. The same as *chband*.

darpaichi. The same as *chokhat*.

daruch. The same as *buara*.

dehad. A raised sill of stone.

dehar. A type of courtyard decoration with earthen colours.

dewad. The same as *chokhat*.

dhaba. A roadside eatery.

dhain. The same as *obara*.

- dhajji*. A false wall of wooden framework and hand-packed stone chips.
- dhalwan chat*. A sloping roof.
- dhing*. The contraption that hurls heavy stones and boulders.
- dhol-maide*. The stone masonry wall having the *cheol* spaced widely apart.
- diar*. Deodar wood.
- dogari*. The second house.
- doghari*. The same as *dogari*.
- dohchi*. The same as *dogari*.
- doodh-kadoo*. A traditional wrestling contest in Mandi District.
- dori*. A floral band.
- doriya*. The composite wood-and-stone structural wall built of alternate courses of *cheol* stone masonry.
- dotha*. Large storage bins made of slates, fixed in the wooden frames.
- dragra*. The same as *behi*.
- droob*. Shoots of green grass.
- duanda*. The entrance door of a room on the *boad*.
- duar*. A door.
- Dudcchang*. A Buddhist festival of Lahul.
- durmat*. A wooden mallet.
- dusrang*. An opening in the roof above the *meling* for the smoke to escape.
- d'war*. The same as *duar*.
- dwari*. The same as *duar*.
- dwar-shakha*. The same as *cbokhat*.
- dzod*. The storeroom.
- dzomoe*. The crossbreed of cow and yak.
- faraque*. a false wall of thick and roughly hewn wooden planks.
- farma*. A collapsible wooden box for moulding bricks.
- fat*. The thick planks used for flat mud roofing in Churah.
- forting*. The floors above the ground floor.
- gadudu*. The wooden fringes.
- gahana*. A threshing-yard.
- gara*. Mud mortar.
- garud kurad*. The ridgepole with head shaped like a falcon.
- gaurasin*. The same as *badbaie manana*.

gawail. The same as *aghal*.

geru. Ruddle

ghadaith. A wooden bench for keeping water pots.

ghal. Transporting timber by floating.

ghanti. A wooden bell or lantern.

ghar. A large house in the trans-Giri area of Sirmaur District, also the multipurpose living room of a Churahi house.

gharat. A watermill.

gharonchee. Stand for keeping water pitchers.

gharsning. The same as *badhaie manana*.

gharyali. A wooden platform for keeping utensils and water pots.

ghorai. The liner wall-decoration comprising hooked lines in various combinations and black dots.

ghotani. A smooth pebble used for burnishing.

ghultoo. A pair of grinding wheels.

ghunsa panthang. The first floor of a house in upper Kinnaur.

gobar. Cow dung.

gohar. The cattle shed on the ground floor.

golu. Local white earth.

gompa. A Buddhist monastery.

go-mutra. Cow urine.

gontar. The same as *go-mutra*.

goonth. The trans-Himalayan pony.

goshal. The ground floor, which is exclusively used for tethering cattle.

gram-devta. The village-deity.

griha devta. The deity of a household or a family-deity.

griha-kundali. The horoscope of a proposed house.

grokch. The same as *chela*.

guala. The penning area of the *ghar* in a Churahi house.

gunret. A type of all-purpose sticky clay that Gujjar of Chamba use for constructing their *kothas*.

gunsa. A large winter living room of a trans-Himalayan house.

gur. Unrefined brown sugarcane jaggery.

gyontar. The same as *go-mutra*.

- hadupu*. A wooden platform for keeping utensils and water pots.
- haila lagana*. The same as *buara*.
- handiyora*. A cupboard in the kitchen.
- hangaiyan*. The floor decorations done by manipulating fingers on the cow dung smeared floor.
- har*. Territory of a deity.
- harpur*. The secondary stands of a Gaddi *chullha*.
- hath*. Span of an open hand between the tips of the thumb and little finger.
- hath-sundi kurad*. A ridgepole with the head shaped like an elephant trunk.
- jagani*. The splinters of resinous wood used for lighting.
- jajaru*. Improvised dry latrine.
- jalaihar*. A separate room in a *chowki* for keeping water pots.
- jalee*. A screen.
- jhee*. A central room, open on one side, in the trans-Giri houses.
- jwari*. The same as *buara*.
- jyokhti*. The same as *jagani*, especially of *chilgoza* (*Pinus gerardiana* Wall.)
- kadiyan*. The purlins.
- kahi*. *Saccharum spontaneum* — a type of thatching grass.
- kainchi*. The woodwork for laying roof.
- kakhet*. A local grass in Chamba used for laying mud roof of a *kotba*.
- kanaran*. The same as *bada*.
- kand*. A red piece of cloth.
- kandal*. A loft.
- kandh*. The same as *bheet*.
- kando*. The same as *goshal*.
- kangasi*. A type of grass used for laying the roof in the Pangri valley.
- kan*. The same as *kabi*.
- kans*. The same as *kabi*.
- kanta*. A wooden contraption to fix a ridgepole.
- kardar*. The local chief functionary of a deity or a state.
- kareen*. The same as *chhana*.
- kari*. A purlin.
- karian*. The purlins for flooring and roofing.
- kashtth*. Wood, especially structural wood (Sanskrit term).

- kathar*. A traditional warehouse for farm produce.
- kathyar*. The same as *kathar*.
- katth*. The same as *kasbtth*.
- katth-kuna*. A corner of the wall made completely of wood.
- katth-kuni*. The same as *doriya*.
- kaur*. The customary tribute to the village deity in the Mandi-Kullu area.
- keewad*. The same as *duar*.
- kewar*. The same as *buara*.
- khad*. A type of thatching grass.
- khai*. The foundation of a Churahi house.
- khala*. The storm-water stream.
- khali*. The same as *khai*.
- khalian*. The same as *gabana*.
- khalyan*. The same as *gabana*.
- khang chen-pa*. The big householder in the trans-Himalayan social system.
- khang chung*. A small house for the old parents.
- khar*. A type of thatching grass.
- kharooori*. The same as *gadudu*.
- khati*. A pit that contains percolated water.
- khayap*. Flat mud roof in upper Kinnaur.
- khilwan*. A flagstone paved open yard.
- khoren*. A box room.
- khud*. A rear room of the ground floor, used as a barn.
- khudi*. A small niche.
- khurku*. A wooden log fixed across the shutters for closing from inside.
- khurtar*. The small decorative spots drawn or carved on the wooden posts.
- khururu*. The same as *gadudu*.
- khwala*. The same as *gabana*.
- koda*. A type of coarse grain, a millet, also known as *mandua*.
- koot*. Tribute paid to Mahasu Devta of Hanol.
- korve*. The same as *kanta*.
- kotala*. An ancient fort or castle.
- koth*. Ground floor of a Pangwal house.
- kotha*. A house of a Gujjar of Chamba.

- kothad*. A large and sturdy wooden box for storing finished grains.
- kothadee*. A large cabin with different compartments for storing different food items.
- kothar*. A separate storage cabin, away from the house for storing grains.
- kothi*. A traditional warehouse for farm produce; large box or silo made of bamboo or reed; also the headquarters of an administrative unit (*paragana*) in the erstwhile Chamba state.
- kul-devta*. Clan-deity.
- kulath*. A type of coarse pulse.
- kumhar*. A potter.
- kundai*. Panelled wooden framework.
- kurad*. The same as *bandor*.
- kursi*. A well-shaped corbel stone.
- kusumbha*. A medicinal herb.
- kutchi*. Grass-brush for white or colour washing.
- kuth*. An important herbal cash crop of Lahul.
- kuthad*. The same as *kothad*.
- kuthar*. Large inbuilt wooden boxes for storing grains.
- kutheri phul*. A stylised decorative geometric device.
- kutthala*. A large box or silo made of bamboo or reed for storing various household items and grains.
- kyar*. A wet paddy field.
- lada*. The ridgepole of a secular building.
- Ladakhi chullha*. A cooking range made of iron sheet with inbuilt smoke outlet and many cooking stands.
- Lahuli chullha*. The same as *Ladakhi chullha*.
- lakore*. A small recess in the wall.
- lamb*. A type of thatching grass.
- larje*. Deodar beams.
- lha-khang*. Sanctum sanctorum.
- linga*. An isolated and hidden land (Bhoti).
- loadnang*. A large iron tripod.
- lohar*. Blacksmith.
- losti*. Ochre.
- lotiya*. A projected gable-end (See also *chhapraur*).
- lugari*. Rice starch.

- magri*. A round wooden log that serves as ridgepole of a thatched roof.
- mahala*. The same as *bukhari*.
- maid*. The flooring.
- maidagi*. The mud plaster.
- mairh*. The ceiling.
- mait*. A dry stone course between the *cheol* of *doriya* or *katth-kuni* wall.
- makar kurad*. A ridgepole of a temple roof, with its head shaped like the snout of a crocodile.
- makol*. The same as *golu*.
- makoti*. A wooden box that serves as a beehive.
- maljan*. A variety of sturdy wild vine (*Bauhinia vahlii* Wight and Arnott) used for thatching.
- mandala*. A small one piece tri-stepped votive stone.
- mandeh*. The third floor of a Gaddi house.
- mando*. The floor level of the ground floor.
- mandua*. Leather pouch of a Gaddi outfit, another name for *koda*.
- manjh*. The second storey of a Jaunsari house.
- manjhi*. Stepladder.
- manyad*. The same as *khai*.
- manyad rakhana*. Laying of the foundation.
- markula*. A special type of alluvial clay found in the trans-Himalayan region.
- masari*. The summer sleeping rooms of a trans-Himalayan house.
- mash*. Lentil.
- mastangi*. One of the chemical components of a special type of superior traditional binding paste for masonry work.
- matkanda*. The in situ rammed earthen wall.
- mauli*. The untwisted cotton thread, dyed red or red-and-yellow.
- meling*. The same as *loadnang*.
- modian*. The ridge of a thatched roof.
- mor kurad*. A ridgepole of a temple roof, with its head shaped like a peacock.
- mord*. Screened small ventilator.
- mori*. A window.
- mugdar*. Cylindrical heavy wooden blocks used for weight lifting.
- mungaree*. The same as *durmat*.
- myhara*. The same as *kotha*.

- nag bel*. A zigzag line with phyllomorphic forms on the kinks.
- nala*. The same as *bandor*.
- nas*. The same as *bada*.
- naswal*. An open side of a *chowki*.
- nayaz*. The same as *badhaie manana* among the Muslim Gujjar.
- neeh*. The same as *kbai*.
- neev*. The same as *kbai*.
- nhas*. The same as *bada*.
- nias*. The same as *bada*.
- nikah*. The Muslim Gujjar marriage ceremony.
- nin-da*. An open barn in the trans-Himalayan region.
- nin-pa*. Backyard in the trans-Himalayan region.
- nipuri*. The first floor of a Lahuli house.
- niyun*. The same as *kbai*.
- obara or obari*. The room on the ground floor, also the same as *goshal*.
- ogla*. a non-cereal coarse grain.
- ohari*. Storage space.
- ora*. An improvised accommodation for tethering cattle alongside the *obara*.
- otta*. The covered veranda on the ground floor.
- ougoon*. An escape for the smoke on the roof.
- paichhi*. The same as *kutthala*.
- pand*. An entresol or mezzanine between the ground and first floors.
- panthang*. Any floor of a house in the trans-Himalayan region.
- paran*. The same as *manjhi*.
- paranda*. The same as *mauli*.
- patari*. The same as *chzalairi*.
- pathraitna*. The same as *badhaie manana*.
- patinda*. The leaven bread.
- patti*. A hamlet or sub-village.
- paura*. The veranda on upper floor/s.
- pedu*. The same as *kutthala*.
- phainte*. A portable stepladder.
- phare*. The floor planks.
- pharkion*. A wooden floor.

- phaula*. A wooden shovel.
- phod*. The same as *pand*.
- pinchhung*. A separate small wooden storehouse for storage of foodstuffs.
- pitch*. The same as *lugari*.
- po*. The ground floor of a Lahuli house.
- poriashma*. The same as *badbaie manana*.
- praur*. The entrance to *chowki*.
- pulla*. A bundle of grass.
- quim*. The part of *bong*, used as a storeroom.
- rasoi*. The kitchen
- rosyane*. The same as *rasoi* in the Giri-par house.
- saktoo*. Coarsely ground roasted grains of barley.
- saldar*. A thick and stout wooden board used as lintel.
- sanari*. The same as *manjhi*.
- sangah*. A wooden staircase.
- sangol*. A stepladder.
- sardal*. The same as *saldar*.
- saret*. The same as *buara*.
- sargra khar*. A type of grass used for thatching.
- serla*. A family room.
- shairta*. The same as *phainte*.
- shaiteer*. A wooden beam.
- shakar*. Jaggery.
- shakpang*. The same as *bhojpatra*.
- shakpo*. Dry meat.
- shan*. The same as *fat*.
- sheelay*. The same as *phare*.
- shila*. The foundation stone.
- shir*. The same as *sangol*.
- shor*. A sturdy vertical wooden bracing in the Giri-par and Jaunsari houses.
- shukla mata*. The local white earth.
- singh kurad*. A ridgepole of a temple roof, with its head shaped like the mouth of a lion.
- sinkhole*. The entrance door of a Pangwal house.
- spain*. A continuous projected wide veranda on the *boad*.

- srelsa*. The summer living room in Lahul area.
- srumupuri*. The third storey of a Lahuli house.
- stoop*. The same as *chorten*.
- suli*. A small wooden chest for storing *saktoo*.
- sur*. Homemade liquor, the same as *chhang*.
- surkhi*. Powder of crushed bricks.
- swari*. The same as *jajaru*.
- taki*. A window.
- tali*. A wood species (*Dalbergia lanceolaria* L.).
- tama*. A large drum.
- taman*. A shooting target atop a tall tree.
- tand*. An independent small wooden kiosk for storage for the maize cobs.
- tandoor*. The same as the *Lahuli chullha*.
- tangra*. The ground floor earmarked for penning.
- tang-sa*. An open roof terrace.
- tarah*. Fodder and fuel storage room.
- tarha*. The loft.
- teen*. Corrugated galvanised iron (CGI) sheet.
- teenanang*. A small opening for the smoke to escape and to admit light and air into the room in a trans-Himalayan house.
- teerai*. A cupboard.
- teeri*. A niche.
- tekut*. A flat wooden club.
- thaili*. A vertical wooden post.
- thali*. The same as *shor*.
- tham*. The same as *thaili*.
- thamb*. The same as *thaili*.
- thambi*. The same as *thaili*.
- thanka*. Buddhist scroll painting.
- thap-tsang*. Cooking stand.
- tthathsari*. a thick wooden roofing-plank.
- Thawin*. A hereditary mason/carpenter-cum-mason.
- thola*. A wood-and-stone pillar.
- thoring panthang*. The second or the uppermost floor of a trans-Himalayan house.

thumbi. The same as *thaili*.

tiri. A small iron-grated window.

tiru. A small niche.

titama pathang. A small cabin where vessels containing water are kept in a trans-Himalayan house.

tohlu. A small opening.

tokari. A basket.

tolai. A projected beam.

tong. A cantilevered deck.

ton-khang. A projected narrow glazed veranda on the front and sides.

traivan. The same as *loadnang*.

trangaris. A narrow rope-bridge.

tsang-ra. Front room on the ground floor in a Lahuli house.

tthatthar. A rough and thick wooden plank.

tthatthara. A structural pillar made of *tthatthar*.

tthela. The same as *buara*.

tuā. The same as *markula*.

tulsi. Basil plant.

tung. A balcony.

udhan. The same as *loadnang*.

uprad. The first floor of a Giri-par house.

urad. The same as *mash*.

ustad. The master artisan.

wad. A closed *tong*.

wan. A room on the ground floor without wall towards veranda; an anteroom.

woll. A wooden shovel-like implement.

zamindaari (rates). The customary concessional rates.

zazru. The bathroom.

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